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ABSTRACT

This Instructor Training Course was developed to provide a means by which students, not educated as teachers, will be introduced to the basic concepts of learning facilitation. Development of this course was partially based upon the "Instructional Development Learning System" model. Instructor training is a nine day, sixty-hour classroom course which provides students with instruction in the rudiments of public speaking, teaching methods, and curriculum development. It affords students opportunities to practice public speaking skills, use different educational methodologies, evaluate learning outcomes at the knowledge level of the cognitive domain and the complex skill level of the psychomotor domain. Other behaviors necessary to facilitate maximum learning gain in classroom, laboratory, and field environments are also presented. (Author/DS)

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TWO WEEK INSTRUCTOR
TRAINING COURSE
INSTRUCTOR'S GUIDE

by

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SE 033 000

TABLE OF CONTENTS

	PAGE
COURSE DESCRIPTION	3
COURSE INTRODUCTION	4
REFERENCES	7
CLASS SCHEDULE	8
COURSE BEHAVIORAL OBJECTIVES	12
COURSE EVALUATION.	17
LESSON PLANS	18
Five Minute Presentation	19
Problems of the Beginning Instructor	21
Student Needs, Human Values and Their Relationship to Instruction.	25
Factors Affecting Learning	37
Ways in Which People Learn	44
Methods of Instruction	51
Topic Selection for 10, 20, and 40 Minute Lessons.	59
Introduction to Lesson Planning.	62
Introduction to Behavioral Objectives.	64
Lesson Planning Activity	69
Task Analysis.	71
Demonstration and Performance Teaching Methods.	74

	PAGE
Evaluating Instructor Performance	78
Introduction to Teaching Aids	85
Teaching Aids Film.	92
Development of Teaching Aids.	94
Planning a Ten Minute Lesson.	97
Ten Minute Presentation	99
Planning for the Twenty Minute Lesson	101
Presentation of Twenty Minute Lessons	103
Study Methods and Test Taking	106
Retention and Transfer of Learning.	113
Planning the Forty Minute Knowledge Lesson.	119
Presentation of 40 Minute Knowledge Lesson . . .	121
Test Methods and Practices.	124
Test Item Construction.	144
Student Counseling.	162
Planning the Forty Minute Skill Lesson.	168
Presentation of Forty Minute Skill Lesson.	170
Course Critique	173

APPENDICIES

A. - Vocabulary	175
B. - Lesson Handouts.	177

COURSE DESCRIPTION

Instructor training is a nine day, sixty-three hour classroom course intended to introduce non-educators to the teaching-learning process. It provides students instruction in the rudiments of public speaking techniques, teaching methods, and curriculum development. Further, it affords students opportunities to practice public speaking skills, use different educational methodologies, evaluate learning outcomes at the knowledge level of the cognitive domain and the complex skill level of the psychomotor domain. Other behaviors necessary to facilitate maximum learning gain in classroom, laboratory and field environments are also practiced.

A basic assumption is made about entering students. They are not inservice educators nor have they been formally educated as such.

COURSE INTRODUCTION

To the Instructor. The Instructor Training Course was developed with one basic objective in mind. That objective is to provide a means by which students not heretofore educated as teachers will be introduced to the basic concepts of learning facilitation. Development of this course was partially based upon the Instructional Development Learning System, (IDLS) model. Publications included in this system as well as other documents used in development are included in the references section. The IDLS uses the following sequence in the production of curricula; behavioral task analyses; criterion reference test items; learning heirarchies; selection of instructional strategies; selection of media and materials; development of instructional materials; validation of instructional materials.

User attention is called to several facets of the course. The individual lesson plans employ the same format as those which students are expected to use. Each lesson plan was written with a student centered perspective. Lesson behavioral objectives reflect either performances or behaviors students should be able to demonstrate as a result of participation in a given lesson, laboratory or field activity. All objectives were written in three parts, performance, condition, and criterion or standard.

Evaluations in the case of each lesson are related to the lesson objectives. The evaluation is in a sense two fold. The intents are to ascertain, (1) whether students are able to demonstrate minimum competency with the objectives and, (2) the effectiveness of the lesson plan as it is written. Lesson plans have companion instructor background sections. These sections provide instructors with information in support of the lesson plans. They are, however, not all inclusive. Therefore, those who become Instructor Training instructors, and who come from positions other than as teachers and teacher educators, may wish to spend time in the literature before instructing in this course.

The course requires students to function at several levels of the cognitive, affective and psychomotor domains. Although once certified as instructors (through completion of this course) students of this course may spend their time instructing at low taxonomic levels, they must themselves function at the higher levels of Blooms (1956) taxonomy.

Course vocabulary is intended to be educationally oriented and in keeping with that which is used in educational literature and teacher education institutions. Those individuals who complete the course and then go on to more advanced study should find compatibility between the terminology used here and that used by our civilian counterparts. The movement to advanced educational methods, theory and curriculum courses should be easy.

To the Student. The course Introduction for Students is the subject of the first handout (see Appendix B).

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CLASS SCHEDULE

<u>DAY</u>	<u>PERIODS</u>	<u>TIME ALLOTMENT (MINUTES)</u>	<u>TIME</u>	<u>SUBJECT</u>
1	2	100	0730-0820 0830-0920	Five Minute Presentations
1	1	50	0930-1020	Problems of Beginning Instructors
1	3	150	1030-1120 1230-1320 1330-1420	Student Motivation & Human Value Goals
1	1	50	1430-1520	Factors Affecting Learning
2	1	50	0730-0820	Ways of Learning
2	4	200	0830-0920 0930-1020 1030-1120 1230-1320 1330-1420	Methods of Instruc- tion
2	1	50		Topic Selection for Ten, Twenty, and Forty Minute Lessons
2	1	50	1430-1520	Introduction to Lesson Planning
3	2	100	0730-0820 0830-0920	Introduction to Behavioral Objectives
3	1	50	0930-1020	Lesson Planning Activity
3	2	100	1030-1120 1230-1320	Introduction to Task Analysis
3	2	100	1330-1420	Demonstration
3	2	100	1430-1520	Performance Teaching Method
4	4	200	0730-0820 0830-0920 0930-1020 1030-1120 1230-1320	Evaluating Instructor Performance
4	1	50		Introduction to Teaching Aids
4	1	50	1330-1420	Teaching Aids Film
4	1	50	1430-1520	Teaching Aids Development

<u>DAY</u>	<u>PERIODS</u>	<u>TIME ALLOTMENT (MINUTES)</u>	<u>TIME</u>	<u>SUBJECT</u>
5	1	50	0730-0820	Planning a Ten Minute Lesson
5	3	150	0830-0920	Ten Minute Presentations
5	3	150	1030-1120	
6	4	200	1230-1320	Planning a Twenty Minute Lesson
			1430-1520	Presentation of Twenty Minute Lessons
6	1	50	0730-0820	
			0830-0920	
			0930-1020	
			1030-1120	
6	1	50	1230-1320	Study Methods and Test Taking
6	1	50	1330-1420	Retention and Transfer
6	1	50	1430-1520	Planning a Forty Minute Lesson
7	7	350	Entire Day	Forty Minute Knowledge Lessons
8	2	100	0730-0820	Test Methods and Practices
8	2	100	0830-0920	
8	1	50	0930-1020	Test Item Construction
8	2	100	1030-1120	Student Counseling
			1230-1320	
			1330-1420	Planning a Forty Minute Skill Lesson
9	6½	325	1430-1520	Presentation of Forty Minute Skill Lessons
9	½	25	0730-1455	Course Critique
			1455-1520	

WEEK ONE

INSTRUCTOR TRAINING

0700	MONDAY	TUESDAY VIDEO TAPE REVIEW CENTER	WEDNESDAY VIDEO TAPE REVIEW CENTER	THURSDAY VIDEO TAPE REVIEW CENTER	FRIDAY VIDEO TAPE REVIEW CENTER
0730 - 0820	Five Minute Presentation	Ways of Learning	Introduction to Behavioral Objectives	Evaluating Instructor Performance	Planning a Ten Minute Lesson
0830 - 0920	same as above	Methods of Instruction	same as above	same as above	Ten Minute Presentations
0930 - 1020	Problems of Beginning Instructors	same as above	Lesson Plan- ning Activity	same as above	same as above
1030 - 1120	Student Motivation & Human Value Goals	same as above	Task Analysis	same as above	same as above

LUNCH

1230 - 1320	same as above	same as above	same as above	Introduction to Teaching Aids	Planning a Twenty Minute Lesson
1330 - 1420	same as above	Topic Selections for 10, 20 40 Minute Lessons	Demonstration Performance Teaching Method	Teaching Aids Film	same as above
1430 - 1520	Factors Affecting Learning	Introduction to Lesson Planning	same as above	Development of Teaching Aids	same as above

WEEK TWO

INSTRUCTOR TRAINING

0700 - 0730	MONDAY	TUESDAY VIDEO TAPE REVIEW	WEDNESDAY VIDEO TAPE REVIEW	THURSDAY VIDEO TAPE REVIEW	FRIDAY VIDEO TAPE REVIEW
0730 - 0820	Presentation of Twenty Minute Lessons	Presentation of Forty Min- ute Knowledge Lessons	Test Methods and Practices	Presentation of Forty Min- ute Skill Lesson	Pay/Checkout/ Graduation
0830 - 0920	same as above	same as above	same as above	same as above	same as above
0930 - 1020	same as above	same as above	Test Item Construction	same as above	same as above
1030 - 1120	same as above	same as above	same as above	same as above	same as above

LUNCH

1230 - 1320	Study Methods and Test Taking	same as above	Student Counseling	same as above	
1330 - 1420	Retention and Transfer	same as above	Planning the Forty Minute Skill Lesson	same as above	
1430 - 1520	Planning a Forty Minute Knowledge Lesson	same as above	same as above	Course Critique	

COURSE BEHAVIORAL OBJECTIVES

The following list of objectives reflects the behaviors students should be able to demonstrate as a result of participation in the Instructor Training Course lectures and conduct of associated activities. They are listed by lesson and then according to the sequence of presentation within a given lesson.

<u>LESSON NUMBERS</u>	<u>OBJECTIVE NUMBERS</u>	<u>OBJECTIVES</u>
1	I.	Know the problems encountered when beginning instructor training students are required to give five minute impromptu presentations.
		A. List distracting hand gestures and other body movements.
		B. Identify nervousness and lack of preparation as problem sources.
2	I.	Understand general problems encountered and characteristics manifested by beginning instructors which must be avoided or rectified if they are to become effective instructors.
		A. Point out the problems and characteristics when evaluating teaching-learning situations conducted by other people.
3	I.	Articulate motivational factors that affect student learning.
	II.	Apply concepts of needs and values to the development of 10, 20 and 40 minute lessons.
4	I.	Discuss factors affecting students' abilities to learn.
	II.	Evaluate educational situations to determine the probability of learning gain to the criterion level.

<u>LESSON NUMBERS</u>	<u>OBJECTIVE NUMBERS</u>	<u>OBJECTIVES</u>
5	I.	Identify modes of sensory input.
	II.	Identify ways in which people learn.
	III.	Interrelate modes of sensory input, ways in which people learn and learning styles.
6	I.	Identify and describe the methods of instruction presented in this lesson.
	II.	Outline the procedures involved in using instructional methodologies used in this lesson.
	III.	Use several methods of instruction in one lesson.
7	I.	Know the differences between the 10, 20 and (2) 40 minute lessons they are to give later on in the course.
	A.	Identify the differences between the four lessons.
	B.	Choose topics suitable for the four presentations.
8	I.	Describe the purpose of each section of a lesson plan.
9	II.	Design student oriented behavioral objectives.
10	I.	Develop a complete lesson plan.
11	I.	Perform a complete task analysis for a specific task.
12	I.	Draft a Demonstration-Performance lesson plan.
13	I.	Identify and describe at least three methods of evaluation.
	II.	Identify attributes of instructor conduct which should be evaluated.

<u>LESSON NUMBERS</u>	<u>OBJECTIVE NUMBERS</u>	<u>OBJECTIVES</u>
	III.	Conduct a formal evaluation.
	IV.	Conduct an administrator-instructor conference.
14	I.	Know a variety of teaching aids.
	A.	Outline the purposes of teaching aids.
	B.	Defines "Teaching Aids".
	C.	Distinguish between different types of teaching aids.
15	I.	Know methods and procedures involved in selecting films, slides and teaching aids suitable for specific lessons.
16	I.	Know methods and procedures used in the development of teaching aids.
	A.	Develops teaching aids.
	B.	Describes methods and procedures used in teaching aid development.
17	I.	Knows principles involved in writing an adequate lesson plan for a 10 minute presentation.
	A.	Draft a 10 minute lesson plan.
18	I.	Deliver a 10 minute presentation.
19	I.	Understand principles involved in writing an adequate lesson plan for a 20 minute presentation.
20	I.	Deliver a 20 minute presentation.
21	I.	Demonstrate an understanding of factors affecting the study environment.
	II.	Articulate the elements of effective studying.
	III.	Identify test taking skills.

<u>LESSON NUMBERS</u>	<u>OBJECTIVE NUMBERS</u>	<u>OBJECTIVES</u>
22	I.	Apply factors related to learning retention to lesson development.
	II.	Describe the relationship between effective teaching, learning retention and the transfer of learning to new situations.
23	I.	Understand principles involved in writing an adequate 40 minute knowledge oriented lesson plan.
24	I.	Deliver a 40 minute lesson at the knowledge of the cognitive domain.
25	I.	Name and describe several types of tests.
	II.	Name and describe several types of test items.
	III.	Describe the steps through which one proceeds when developing a test.
26	I.	Construct Criterion-Referenced test items.
27	I.	Demonstrate an understanding of good counseling techniques.
28	I.	Understand principles involved in writing an adequate 40 minute skill oriented lesson plan.
		A. Write a task analysis.
		B. Draft a 40 minute skill lesson plan.
29	I.	Deliver a 40 minute presentation that involves teaching a specific skill.
30	I.	Know the basic principles required for course evaluation.
	A.	Assign a proper Lihert scale value (strongly agree-strongly disagree) for each category of the course evaluation form.

LESSON
NUMBERS

OBJECTIVE
NUMBERS

OBJECTIVES

B. Make proper objective comments for each course evaluation form.

COURSE EVALUATION

Students will be evaluated during the course of instruction. Accumulation of seventy percent of the total possible number of points is considered the minimum competency level for successful completion of the course. Students are evaluated as follows:

<u>ACTIVITY</u>	<u>% OF TOTAL</u>
1). 10 Minute Lesson	5
2). 30 Minute Lesson	13
3). 40 Minute Knowledge Lesson	25
4). 40 Minute Skill Lesson	25
5). Behavior Objective Exercise	8
6). Task Analysis Exercise	8
7). 40 Minute Skill Lesson Plan	8
8). Test Construction Exercise	8
	100

INSTRUCTOR BACKGROUND

LESSON 1

The five minute presentations are intended to be impromptu. When thrown into such a position many people become nervous or feel inadequate, both of which generally are related to lack of preparation. These problems are manifested in the speaker's actions. Those actions include, but are not restricted to, hand and arm waving, hand wringing, eye scratching, manipulation of eye glasses, pipes and chalk, pacing, leaning on a podium, stuttering, excessive use of "and," loss of train of thought and subsequent direction in speech, excessive use of jokes, and so on.

All such physical movements and distracting speech patterns not only divert attention from the talk but are disturbing to listeners. In many cases, the distraction is so great that attention is successfully diverted from the speech. The end result is that the presenter facilitates little if any learning gain.

A great deal of the nervousness - inadequacy syndrome may be alleviated through proper planning and study prior to presentation. Future teachers who realize this not only help themselves, but decrease greatly the probability that learning failure will occur amongst their students.

- TITLE: FIVE MINUTE PRESENTATION
- LESSON NUMBER: 1
- TIME: 100 Minutes. Six minutes are allowed for each presentation and class size is limited to sixteen students.
- BEHAVIORAL OBJECTIVES: As a result of participation in this activity, students should know and/or be able to:
- I. Know problems encountered when beginning instructor students are required to give five minute impromptu presentations.
 - A. List distracting hand gestures and other body movements.
 - B. Identify nervousness and lack of preparation as problem sources.
- CONDITION: Without the use of notes.
- CRITERIA: The standard reflecting minimum is that students be able to identify at least six of the following:
- A. Waving or swinging arms, scratching neck and arms, excess handling of eye glasses, leaning on a podium.
 - B. Nervousness, lack of preparation.
- MATERIALS: The only materials available for student use are chalkboard and chalk. Video taping equipment, video tapes are available for use by the instructor.
- INTRODUCTION: Each student is to give a five minute presentation. Observers (students not presenting) should watch for problems which occur during these presentations and consider methods of rectification.
- PRESENTATION: I. Five Minute Presentation
 - A. Each student makes a five minute presentation.

1. If possible, approximately 3 minutes of each student's presentation should be videotaped.

2. Presentations topics:

- a. Can be any subject about which the students' desire to speak.

- i. Many students find it easiest to talk about themselves.

- B. Students are encouraged to review the videotapes of their presentations.

APPLICATION:

Group discussion - problems encountered when instructors are unprepared.

SUMMARY:

Summarize problems encountered in impromptu or unprepared speaking.

EVALUATION:

The objectives are evaluated in two ways; (1) by evaluation of the group discussion; (2) observing student performance in later presentations and comparing those performances with this one.

INSTRUCTOR BACKGROUND

LESSON 2

Beginning teachers, as might be expected, tend to make many mistakes. Some of those mistakes were confronted in Lesson One. Those notwithstanding, there are many additional problems which are more related to use of teaching methodologies than to personal mannerisms. Some are discussed below.

Facilities and equipment are often misused by beginners. Classrooms are often poorly lighted and seating improperly arranged. Ventilation is either excessive or nonexistent, leading to improper temperature regulation leading to subsequent discomfort on the part of students.

Neophytes tend to waste class time. This is often done by improper and excessive use of chalkboards, excessive use of poorly selected films, slides and other teaching aids, use of improper questioning techniques, arguing with students, and using the class as a public forum to air personal problems and political persuasions.

The majority of these problems and others like them are rectified through proper planning and experience. Others are identified during instructor evaluation sessions and rectified as a result of input gained during instructor-evaluator conferences.

TITLE: PROBLEMS OF THE BEGINNING INSTRUCTOR

TIME: 50 Minutes

LESSON NUMBER: 2

BEHAVIORAL
OBJECTIVES:

As a result of participation in this lesson, students should understand and/or be able to:

I. Understand general problems encountered and characteristics manifested by beginning instructors which must be avoided or rectified if they are to become effective instructors.

A. Point out the problems and characteristics when evaluating teaching-learning situations conducted by other people.

CONDITION: Without the use of notes and other printed matter.

CRITERIA: Standards reflecting a demonstration of minimum competency are:

A. Four of six problems and characteristics.

B. Students should be able to identify 90% of the problems which occur in any actual teaching-learning situation.

MATERIALS: Chalkboard, chalk, handout on The Most Common Weaknesses of Instructors, and Hints for Effective Teaching (one copy for each student).

INTRODUCTION: Beginning instructors are unique in many ways. Because of these unique features, instructional mistakes often occur.

PRESENTATION: I. Unique features of beginning instructors

A. Teach at the knowledge level of the cognitive domain, rather than higher levels involving concepts.

1. Define cognitive domain

B. Teaches skills at the adaption level of the psychomotor domain.

1. Define:

a. Psychomotor domain

b. Adaption level

C. At many times beginning instructors teach peers.

D. Normally are placed in an instructional capacity because they possess expertise in a specific area.

E. Normally, they have not been formally educated as teachers.

II. Most common weaknesses of beginning instructors:

A. Failure to adequately prepare lessons.

1. Manifested by improperly prepared or non-existent lesson plans.

B. Failure to determine entry level abilities (knowledge and skills of their students)

C. Inadequate use of facilities.

D. Misuse of teaching aids.

E. Failure to develop good relationships with students.

1. Failure to learn and use students' names.

2. Arguing with students.

3. Ridiculing and otherwise making fun of students.

4. Failure to praise students (always done in public if possible).

5. Reprimanding students in public (always done in private if it is necessary).

F. Poor use of personal traits.

1. Incorrect use of voice

a. Monotone

2. Sloppy appearance

3. Lack of enthusiasm

G. Lose sight of lesson objectives.

1. Allow trivia to upset or distract a class.

2. Class time is used for purposes other than for that which it is intended.

3. Allowing class discussions to wander and become non-directed.

APPLICATION:

Conduct a class discussion in which the subject is the weaknesses manifested beginning instructors and how those weaknesses can be overcome. It should be stressed that although many beginning instructors are not professionally educated, many of the common weaknesses stressed above can be avoided.

SUMMARY:

Review mistakes made by beginning instructors. Also, give each student a copy of the handout, the Most Common Weaknesses of Instructors, and Hints for Effective Teaching.

EVALUATION:

The objectives of this lesson evaluated by
(1) reviewing students' evaluations of other students' 10, 20 and 40 minute presentations.
(2) observing students as they make their 10, 20, and 40 minute presentations.

INSTRUCTOR BACKGROUND

LESSON 3

Maslow hypothesized that there existed a hierarchy of human needs. The hierarchy consists of physical, safety or security, social, ego and self actualization needs. Physical needs are those needs either directly affecting survival or affecting the quality of life. They include, but are not limited to, the need for air, food, water, shelter, clothing (subsequently adequate warmth). Some are related to the body's physiological state (and subsequently to perceived comfort) while others affect comfort more directly (and subsequently psychological state). For example, ingesting adequate amounts of food and water maintains body chemistry at a proper level. The body therefore has had one of its physical needs satisfied. As a result, perceptions might be that hunger and thirst are non-existent. Since the individual is not hungry or thirsty, he or she is psychologically comfortable and so not driven to seek either food or water. When a biochemical imbalance occurs (change in physiological state) because of excessive time lapse between meals or drinks, however, the situation changes. One now has a perception of being hungry or thirsty and is moved to seek food or water. A similar situation occurs when body temperature falls below its normal 37 C.

The first signal of falling body temperature is operation of the shivering reflex. When this occurs, sensory nerve endings transfer information via the autonomic nervous system to the brain. Once the brain receives notification the body is cooling, the individual perceives a condition (psychologically of being cold). That person is then driven to don extra clothing, close a door or window, seek shelter or take other evasive action leading to restoration of proper temperature and a feeling of comfort.

Physical or survival needs must be satisfied before people can or will operate at the next and subsequently higher levels of the hierarchy. If these needs occur (acutely or otherwise) while individuals are functioning as students, and if they are strong enough, the motivation they produce is stronger than the motivation toward the learning situation. Unless satisfied, these needs confound the learning process and the amount of learning gain decreases.

Safety or security needs are related to assurance that items such as sufficient food supplies, adequate housing and so on will be available for extended periods. People also need to feel the status quo will not change suddenly; that their environment will evolve rather than be disrupted by revolution. Social needs are those related to like, love, affection and group acceptance. Group acceptance is a need we all strive to fill whenever we enter new

situations. It may motivate us to antisocial action if that's what is required for group acceptance. For example, we may be motivated to be disruptive in a classroom if our peer group revers that kind of activity. When strong enough, it is a negative motivator, with regard to learning, yet a positive motivator for our actions.

Ego is extremely important in educational settings. Most people need to have their talents recognized. Teachers may use this need to advantage by praising people in public for their accomplishments. The praise received is an ego boost, so to speak, and the individual is motivated to continue positive behavior. Appealing to an individual's ego is done in many ways. Teachers who know their students are able to use ego involvement as an educational tool. We should, however, use it with care; ego involvement comes about in a somewhat different way with each person.

Self-actualization is often a feeling of growth, gaining expertise, the response to challenge and the like.

Most humans have certain value sets which are closely related to Maslow's theory. Some of those values are personal attention, respect, enlightenment, development of talents, power of choice, wealth and well being. All of these, if used correctly by instructors, become learning motivators. Personal attention is a form of ego involvement. It can be used positively by praising students for their accomplishments, selecting them to perform tasks which

emphasize the talents they have, etc.

People should have a healthy respect for others and themselves. Instructors may use this in a positive manner by learning and using their students' names. People in general take aversion to being called constantly by only their last name. Instructors are well advised to learn both their students' first and last names or a title plus the last name. Some titles which might be used are Mr., Miss, Mrs., Dr., Commander, Petty Officer, Chief, Seaman and so on.

Enlightenment is a quality gained through education, experience and previous interaction with the environment that allows individuals to make decisions. It is often times called background.

People generally speaking are interested in developing their talents. Allowing them to pursue talent development and showing them how these talents can be used once they are developed can often be used to motivate students. Most individuals hold control over their own destiny, in high regard. The power of choice, as it is often known, involves decision making, control over outside influences, development of leadership ability and concomitantly ability to exert authority. Although in educational settings it is not always possible to allow unlimited power of choice, instructors can use this concept by guiding students to make decisions about their lessons that would otherwise be made by the instructor. That

is the instructor should finesse proper decisions from their students.

Money is important to all of us. Only through use of our financial power can we purchase the goods and services we need. Students who see their studies leading to the accumulation of wealth are usually motivated to do their best. Well being is a combination of what Maslow physical and safety or security needs. It involves physical comfort, freedom from fear, contentment and happiness.

- TITLE:** STUDENT NEEDS, HUMAN VALUES AND THEIR RELATIONSHIP TO INSTRUCTION
- TIME:** 150 Minutes
- LESSON NUMBER:** 3
- BEHAVIORAL OBJECTIVES:** As a result of attending these sessions, students should be able to:
- I. Articulate motivational factors that affect student learning.
 - II. Apply concepts of needs and values to the development of 10, 20 and 40 minute lessons.
- CONDITIONS:**
- A. Using Maslow's hierarchy of human needs.
 - B. Using the relationship between human values and instructor characteristics.
- CRITERION:** The standard reflecting minimum competency with the objectives is that students submit 10, 20 and 40 minute lesson plans that reflect application of the concepts presented here.
- MATERIALS:** Chalkboard, chalk, one copy of the handout, Maslow's Need Theory for each student, one copy of the handout, Human Value Situations for each student.
- INTRODUCTION:** Motivation is an inner drive that prompts individuals to action. In this regard, not doing something may in fact be an act of doing something. As humans, we are motivated to act or learn for a variety of reasons. Instructor awareness of these factors will influence greatly whether or not students' motivational states are accommodated. Meeting student needs influences whether or not learning takes place and to what degree.
- PRESENTATION:**
- I. Maslow's Need Priority Theory.
 - A. Needs - People are moved to action by needs they strive to satisfy.

1. The needs exist in a priority relationship (hierarchy) best illustrated by a triangle.

a. Basic and most important needs are at the bottom (handout, Maslow's Need Theory).

b. Basic needs are the strongest motivators of human action.

c. Once highest order or most basic needs are satisfied, they no longer motivate action.

d. Once the needs at one level are satisfied, the next order of needs becomes the motivating factor.

2. The hierarchy

a. Physical or survival

i. Air

ii. Food

iii. Water

iv. Shelter

v. If students' survival needs are not met, they may be motivated to exhibit unwanted behavior during a teaching-learning situation.

b. Security or Safety

i. Assurance of sufficient food supplies.

ii. Maintenance of the status quo - things will remain as they are or evolve rather than revolve - security may be threatened by unexplained innovations or sudden procedural changes.

iii. Examples: (1) students in boilerman school may fear steam under

high pressure; (2) corpsmen may fear giving themselves shots.

c. Social needs

i. Love and affection

ii. Acceptance by the group

(a) A strong motivator when military people report to a new command.

(b) students are often more concerned with finding friends than being scholars.

(c) maybe a negative motivator - the wrong crowd syndrome.

d. Self-Esteem (status)

i. The need to feel important.

(a) need to have abilities and talents recongnized.

(b) satisfaction of this need may be hampered when students see audience approval through applause - indication of extrovert problems.

ii. Need may be filled by

(a) being the top student

(b) receiving a passing grade.

iii. Self respect must be maintenance. Students are concerned with.

(a) avoiding humiliation

(b) being viewed unfavorably by fellow students and instructors.

e. Self-Fulfillment (Growth)

- i. Need to respond to challenge
- ii. Need to experience pride as a result of accomplishments

iii. Examples

- (a) Olympic Champion
- (b) Becoming a qualified surfman
- (c) Being high person in the class
- (d) Maintenance of an 80% average

iv. The need is not related to intelligence or ambition.

v. Satisfying the self-fulfillment need is largely based on the need to respond to challenge, have inner confidence that one can succeed, to feel competent that one can produce products that are worthwhile and to acquire self-esteem.

f. Movement up the hierarchy.

i. A step-by-step progression

- (a) at lower levels, needs are related to outside factors (survival and security needs).
- (b) higher levels are controlled by a combination of external and internal factors. (inter- and intrapersonal relationships).

1. Instruction should provide organization, and clearly defined objectives and therefore fill the security need.
2. Instruction, where applicable should provide for student well being i.e. food, shelter, clothing and thus fill the survival need.
3. Instruction should be conducted in an environment which allows students to be in social contact with other students in a non-structured way i.e. small group discussion, free time at beginning or end of class.
4. Instruction provide for some type of success for each trainee when effort is involved. Rewards should not be given just to give them, however, instruction and class work should not be so difficult that it prohibits attaining some success. Example - In oral questioning, some of the easier more fundamental questions should be directed to the less able students, while the more capable students should be given the more difficult questions.
5. Instruction should be challenging. It should challenge all students. Students should not be allowed to just wander through a course of instruction. A need for growth is essential to keep any student motivated, using good students to tutor the less able student is many times an appropriate way of motivating not only the more capable but also the less able.

II. In addition to needs, there are human values which will directly affect our motivation level, and consequently our ability to learn. These human values interact at every need level and will determine the degree to which efficient and effective learning takes place. Some of these values are also needs.

A. Personal Attention - A need to belong and be accepted. Normally we seek this kind of attention from those around us. We need to feel important as an individual.

B. Respect - Related to our feeling of self-esteem and obtained through our recognition of accomplishments.

1. Self-respect
2. Respect for others

C. Enlightenment - Possession of a background which allows individuals to make important individual decisions. Involves:

1. Functional understandings
2. Ability to clarify
3. Ability to make generalizations
4. Insight

D. Skill - Development of talents which satisfy feelings of adequacy and achievement. Skills which are valued may be mental, manual, and/or social (dealing with people).

E. Power of Choice - It involves:

1. Decision making
2. Control over outside influences
3. Leadership
4. Ability to exert authority

F. Wealth

1. Money
2. Goods and services

G. Well being - Related to individuals' physical and mental health needs. It involves:

1. Physical comfort
2. Freedom from fear
3. Contentment
4. Happiness

APPLICATION:

Students apply the concepts discussed here to the development of 10, 20 and 40 minute presentations. In addition, the principles discussed here are applied when the students themselves become instructors.

SUMMARY:

Review the hierarchy of student needs and human values. Review instruction methods and their relationship to these needs and values.

EVALUATION:

The objectives of this lesson are evaluated by critiquing 10, 20 and 40 minute lesson plans; 10, 20 and 40 minute presentations and reviewing the video taped portions of the respective presentations.

INSTRUCTOR BACKGROUND

LESSON 4

The list of factors which affect learning is probably as long and as varied as there are numbers of individuals. There are, however, some that educational leaders feel apply to all individuals and all teaching-learning situations. These are readiness, primacy of learning (learning information, ideas and concepts correctly the first time), vividness of the educational experience, individual differences and instructor characteristics.

Before students are able to learn they must be ready to learn. Readiness is often subdivided into three parts: physical, mental, and emotional readiness. Physical readiness on the part of the learner includes being in the proper nutritional state, being properly clothed, comfortable, and so on. Mental readiness is having an interest in the subject at hand and emotional readiness is noted by the level of excitement about the subject to be studied (a manifestation of motivational state).

Students who learn instructionally important information correctly rather than incorrectly the first time it is studied exhibit greater amounts of learning gain than those who experience the converse. The reason, of course, is that things learned incorrectly must be relearned. Relearning not only consumes valuable student time, but also has a negative effect on student motivation.

Vivid lecture, laboratory and field learning experiences tend to be the best facilitators of student understanding. It therefore is essential for instructors to stress important points using concrete and clear examples and discussions. In addition, subjects should be presented in meaningful manners and logical sequences.

Instructors should take into account individual differences of students. While lectures are usually designed for those who might be considered the center of the class, in reality, centers in terms of abilities are non-existent if we understand that all people are indeed individuals. This means that if we are not careful in the assumptions made before lesson development, some students may become bored with our instruction while others become hopelessly lost in it. A fair assumption to make in this regard is that all people except the profoundly learning disabled have pretty much the same abilities. What they don't all have are identical backgrounds, experiences, health and the myriad of other factors that go into making an individual an individual. It is these factors that must be taken into account when designing learning strategies which are to be the best facilitators of learning gain for the greatest number of people.

Other factors greatly affecting learning are the educational setting interactions. Those interactions are student-student interactions, student-instructor interactions and instructor-instructor

interactions. Student-student interactions can be used to great advantage. Students who get on well with the subject should be used as tutors to help students who have problems for one reason or another.

Student-instructor interactions are also important. Instructors who develop good rapport with students find this a great learning motivator.

TITLE: FACTORS AFFECTING LEARNING

LESSON NUMBER: 4

TIME: 50 Minutes

BEHAVIOR
OBJECTIVES:

As a result of attending this lecture, students should be able to:

- I. Discuss factors affecting students' abilities to learn.
- II. Evaluate educational situations to determine the probability of learning gain to the criterion level.

CONDITION:

- A. Without the use of notes and other printed material.
- B. Within an actual teaching-learning situation.

CRITERION:

The standard reflecting minimum competency is that students be able to identify the existence, or each of 80% of the learning situation variables discussed in this lesson.

MATERIALS:

Chalkboard, chalk, one copy of the handout (Example: Learning Environments).

INTRODUCTION:

There are a number of variables instructors must take into account if they are to be effective. First, however, we must define teaching and learning.

I. Define the following terms:

- A. Teaching - The art of behavior modification leading to desired student performance.
- B. Learning - The modification of student behavior as a result of education, experience or training.

PRESENTATION:

I. Factors affecting student learning abilities.

A. Readiness - Students must be ready to learn.

1. Breakdown of Readiness

a. Physical readiness - proper nutritional state, properly clothed, comfortable, etc.

b. Mental readiness - an interest in learning; an understanding of what is to be learned and how it fits students' perceptions of reality.

c. Emotional readiness - the level of student excitement about learning.

i. Manifestation of student motivational state.

B. Learning information, ideas, and concepts correctly.

1. Principles learned incorrectly must be unlearned and relearned, a situation which has negative effects upon:

a. Student motivation

b. Student-instructor rapport

C. Vividness of the educational session.

1. Important points are stressed using examples and discussions.

2. Subject is meaningful.

3. Subject is presented in a logical sequence.

D. Individual Differences

1. Educational level

2. Experience

3. Physiological characteristics

4. Psychological characteristics
5. Physical maturity and related psychomotor abilities.
6. Affective characteristics, interests, motives, attitudes, values, emotional expressions.
7. Health
8. Self-concept
9. Perception of situation
10. Age
11. Sex

E. Characteristics of instructors

1. Knowledge of subject matter, development, learning, and teaching skills
2. Psychomotor abilities and physical attributes
3. Affective characteristics; interests, motives, attitudes, values, emotional expression
4. Health
5. Self-concept
6. Perception of situation
7. Sex
8. Age

F. Educational setting interactions

1. Student- student
2. Student-teacher

3. Teacher-teacher

4. Teacher-administrator

II. Evaluation of educational situations

A. Students evaluate three sample situations.

1. Students work in groups of four.

a. 5-10 minutes for group discussion

b. 3 minute report from each group
on findings

APPLICATION:

Students are encouraged to apply the principles discussed here to development of their own 10, 20 and 40 minute lessons.

SUMMARY:

Review the categories of factors affecting learning outcomes.

EVALUATION:

The objectives of the lesson are evaluated by,
(1) determining the quality of student reports;
(2) evaluating the students' 10, 20 and 40 minute presentations.

INSTRUCTOR BACKGROUND

LESSON 5

People learn in many ways. The first step in the process is information acquisition. Humans use vision, hearing, smell, taste, touch and kinesthetics as modes of sensory input. All of these modes are important at one time or another as people attempt to learn from and about their environment.

Information gathered through the senses leads to many types of learning. Some of those types are conditioning, observation, trial and error, interpretation, translation, application, analysis and synthesis. Conditioning is a type of stimulus-response learning. Here a person reacts to a certain stimulus and an outcome is produced. If the outcome is rewarding, the individual reacts in the same way the next time the stimulus occurs. The procedure continues and eventually the desired response (that which produces the acceptable outcome) becomes automatic. For example, whenever a person hears a general quarters alarm, he or she proceeds automatically to the proper battle station. The reward in this case, or that factor which motivates repeated behavior of the same type, is a feeling of safety or security provided by the battle station.

Observation leads to imitation. Here the person observes the actions of another and then attempts to duplicate those actions.

This method is related to the demonstration-performance teaching method discussed later in the course.

The trial and error method might truly be called the discovery method of learning. In attempting to answer a question, an investigator tries many things. One of the trials produces desired results, the answer has been discovered.

When students organize data they are attempting to interpret or make inferences about a situation.

Translation involves changing information from one form to another in an attempt to learn something about it. For example, a ship travels north for ten hours at a speed of four knots and then turns 90° and steers a course due west. During the westerly leg of the journey the ship travels at ten knots. After thirteen hours have lapsed from the ship's original departure, the Commanding Officer needs to know how far the ship is from its point of origin. In order to answer the question, the information must be translated to a form that allows an easy mathematical solution. Since a 90° angle is involved the problem may be solved using the Pythagorean Theorem, that is $C^2 = A^2 + B^2$ where C^2 is the hypotenuse of the triangle and in this case the distance the ship is from its point of origin ($C^2 = 30^2 + 40^2$). Thus a word problem has been translated to one using numbers, symbols and a formula.

Application involves the transfer of understanding from one

situation to another. Once the navigator learns the principle involving use of the Pythagorean Theorem to solve certain navigation problems, he or she applies the principle to other problems having the same element or elements. The elements in this case are two legs of relatively short length and separated by a 90° angle. Analysis is a relatively complex type of learning. It required that a situation be broken into component parts and the parts analyzed to learn something about the whole.

Synthesis is somewhat like an invention. Learners put together skills and information gained from a variety of previous learning situations in order to synthesize new wholes or new understanding. All learning in the cognitive, affective and psychomotor domains conforms to a hierarchy. Instructors are referred to the handout titled, Taxonomies of the Cognitive, Affective and Psychomotor Domains for additional background.

The way in which people actually learn is called a learning style. A learning style is actually the sum of the things a person does when trying to learn something. Styles vary from person to person and seem based upon one's experience, upbringing and a host of other factors. It is conceivable that within a given class there will be as many different learning styles as there are students. This suggests that a variety of teaching methods must be used if instructors are to facilitate the maximum amount of learning across an entire class.

TITLE: WAYS IN WHICH PEOPLE LEARN

TIME: 50 Minutes

LESSON NUMBER: 5

BEHAVIORAL
OBJECTIVES:

As a result of participation in this lecture, students should be able to:

- I. Identify modes of sensory input.
- II. Identify ways in which people learn.
- III. Interrelate modes of sensory input, ways in which people learn and learning styles.

CONDITIONS: Without the use of notes and other printed materials.

CRITERIA: The standard reflecting minimum competency with the objectives is submission of 10, 20 and 40 minute lesson plans in which there is obvious application of 80% of the principles discussed in this lesson.

MATERIALS: Chalkboard, chalk, one copy of the handout, Taxonomies of the Cognitive, Affective and Psychomotor Domain for each student.

INTRODUCTION: Ways in which people learn are related to modes of information acquisition and students' preferred learning styles. Effective instructors who in reality are facilitators of learning, understand the interaction between learning styles and modes of information acquisition and apply the concepts to lesson development.

PRESENTATION: I. Modes of Sensory Input.

A. Conduct a class discussion in which students identify and provide examples of the modes.

B. The modes:

1. Vision
2. Hearing
3. Smell
4. Taste

5. Touch
6. Taste
7. Kinesthetics

II. Ways People Learn

A. Conditioning (stimulus-response)

1. A specific stimulus-response pair is established as a result of repetition.
 - a. Response elicits a reward if the response is correct.
 - b. The reward reinforces the response so that identical responses are elicited when the stimulus again presents itself.
 - c. Example - when a fire alarm is heard, individuals automatically proceed to an assembly area.

B. Observation (imitation model)

1. Observers duplicate the behaviors of their models.

C. Trial and Error

1. A discovery method.
2. Through repeated efforts, students learn methods which result in success.

D. Interpretation

1. Students organize information as they search for trends.

E. Translation

1. Situations are translated from one form to another. For example, verbal mathematics problems are translated into symbolic statements.

F. Application

1. Principles and understanding gained from one learning situation is applied to new situations (sometimes called transfer).

G. Analysis

1. Situations are dissected in an effort to learn about their elements.

H. Synthesis

1. Skills gained from previous learning situations are put together to form a new whole.

III. Learning Styles

A. The way a student learns is based upon:

1. Sensory input modes (usually more than one).
2. Student experience.
3. Students' perceptions of the ways they learn best.
4. The methods which provide greatest satisfaction to students.

IV. Learning Hierarchies

A. Discuss the three learning domains (use student handout).

B. Discuss the levels within each domain.

APPLICATION:

Conduct a class discussion concerning how these principles may be applied to development of a specific lesson. These principles are also applied to development of 10, 20 and 40 minute lessons.

SUMMARY:

Brief restatement of the principles covered in the lessons.

EVALUATION:

The objectives of this lesson are evaluated by examining the 10, 20 and 40-minute lesson plans submitted by students.

INSTRUCTOR BACKGROUND

LESSON 6

There are a wide variety of teaching methods in use today. Some are considered in this lesson. They are the lecture method, the demonstration performance method, group discussion, role playing, programmed instruction, audio-tutorial instruction, lecture-demonstration and brainstorming. Use of a specific method, however, is arbitrary. Good instructors use an eclectic approach when deciding how lessons are to be taught.

The lecture method is usually a passive situation for learners. Students usually sit while the instructor stands. The instructor is essentially a dispenser of information while students are the passive recipients of whatever the instructor covers. This type of instruction is most often thought of being teacher, rather than student centered. Naive instructors who use this method tend to conduct learning sessions in which students acquire information through only one sensory input mode, aural. The lecture method has several other disadvantages. Unless instructors are experienced and lecture extremely well, organized lectures are difficult to follow. In addition, lectures tend not to be designed with individual differences of students in mind. They are designed for the "center ability" level of students in the class. When designed this way, lectures lose those students with lesser backgrounds and bore those with greater backgrounds.

The demonstration-performance method is used to teach skills. It is truly a concrete learning situation in the sense that students deal with

concrete reality rather than abstract concepts. When this method is used, the instructor demonstrates the skill to be learned, and then students perform the skill as many times as is necessary to achieve excellence. This method is often used in laboratory and field learning situations.

Group discussions are used as a method of sharing information between students. This method is especially good because it requires active participation by students and also, because all students, regardless of the amount they prepare for classes come with different perspectives about a subject. The group discussion method allows sharing these perspectives.

Role playing is the acting out of parts by students, i.e. some students act out while others watch. The method is especially good when students are studying court procedures, etc.

Individualized instruction covers many approaches to instruction. The two of interest here are programmed instruction and audio-tutorial instruction. Programmed instruction is instruction in which students read information presented in workbook style publications and react to questions included in context. Students read and study a block of information, answer questions about that block and then compare their answers with the correct responses provided in the text. Correct responses are provided on the page where the question is asked or on the following page. Students who produce incorrect answers, return and restudy the block. An alternative to using printed matter in this regard is to use a form called the computer assisted instruction (CAI). With CAI, students type answers to questions and the computer produces an output

indicating whether or not the response was correct. The beauty of programmed instruction is that students obtain immediate feedback. The time lag between learning and testing is minimal.

Audio-tutorial instruction allows students to work at their own pace using a variety of media. The multimedia or multisensory input appeals to individual learning styles. When this approach is used, an instructor is always present. The instructor works on a one-to-one basis with students who have trouble with the material that is presented. The audio-tutorial method, when students are allowed sufficient time, is probably the best facilitator of learning for the greatest number of students.

Lecture-demonstration is an extension of the pure lecture method. It provides demonstrations that accompany lectures. It therefore provides sensory input through more than one mode.

Brainstorming is somewhat like the discussion method. A group of people gather in one place to solve some problem (or to learn something about the problem). Ideas are solicited from all participants and individual participants learn about the subject from the input of others.

TITLE: METHODS OF INSTRUCTION

TIME: 200 Minutes

LESSON NUMBER: 6

BEHAVIORAL
OBJECTIVES:

As a result of participation in this session and its associate activities, students should be able to:

- I. Identify and describe the methods of instruction presented in this lesson.
- II. Outline the procedures involved in using instructional methodologies used in this lesson.
- III. Use several methods of instruction in one lesson.

CONDITIONS:

- A. Using class notes and other printed material.
- B. With the aid of instructors.

CRITERION: The standard reflecting a demonstration of minimum competency is the completion of a 10 minute presentation in which the presenter correctly uses three different instructional methods.

MATERIALS: Chalkboard, chalk

INTRODUCTION: Teaching-learning situations are not all conducted in the same manner. The instructional style or instructional methodology is usually dictated by the subject being taught, the students' and the instructors' perception of how people learn or conversely why they fail. In the last analysis instructors probably facilitate the greatest amount of learning gain if they are eclectic in their lesson development.

PRESENTATION: I. Methods of Instruction

A. The Lecture Method

1. One of the hardest methods to use effectively.
 - a. Requires most careful preparation.
 - b. Utilize only sense of hearing.

- c. May neglect students' backgrounds.
 - d. Difficult to follow.
 - e. Cannot account for individual differences of students.
2. Procedures involved.
- a. Instructor introduces the lesson.
 - b. Students take notes.
 - c. Students study notes, texts, references.
 - d. Students take test.
 - e. Test questions are discussed by students.
3. Factors to be considered when designing lessons around this method.
- a. Pinpoint the exact purpose of the instruction.
 - b. Orient the instruction so that it takes into account students' backgrounds and interests.
 - c. Limit the quantity of lecture material to that which can be readily assimilated by the audience.
 - d. Use examples to illustrate instructionally important points.

B. Demonstration-Performance Method

- 1. The simplest most natural instructional method.
- 2. Procedures involved.
 - a. Instructor demonstrates a skill or behavior which students must perform.
 - b. Students perform the behavior or skill demonstrated by the instructor.

- c. Students repeat the performance as many times as is necessary to achieve excellence.

C. Group Discussion

- 1. Uses and advantages.
 - a. Provides opportunity for informal expression of personal experiences and information not in the text.

D. Role Playing

- 1. Procedures involved.
 - a. Usually involves more than one student.
 - b. Students act out in skit form some instructionally important parts - enactment of a captain's mast or court martial.
 - c. Students not involved in the skit observe.
- 2. Advantages
 - a. Allows active participation of students - provides an active rather than passive learning environment for many of the students.
 - b. Adds reality to instructionally important material.

E. Individualized Instruction

- 1. Programmed instruction.
 - a. Procedures involved.
 - i. Instruction uses multimedia approach - audio, video, slides, printed materials, conduct of experiments.
 - ii. Students as long as is necessary in order to attain minimum competency levels.
 - iii. Students restudy materials with ease.

- b. Advise students of ground rules.
- c. Reviews pertinent information and outlines the problem.
- d. Charged with responsibility to involve all members.
- e. Stress important points to be recorded.
- f. Summarize and list items learned or conclusions reached.
- g. Accounts for individual differences amongst students.
- h. Makes use of multisensory input.

F. Lecture-Demonstration

- 1. Procedures involved.
 - a. Usually involves two instructors.
 - b. One instructor lectures.
 - c. Second instructor demonstrates instructionally important points using teaching aids.
 - d. Passive learning on the part of student as with the lecture method - they sit and observe.

II. Student Activity

- A. Divide the class in half.
- B. Allow one 50 minute period for planning.
- C. Planning.
 - 1. Each student plans a 10 minute presentation.
 - a. Presentations should be designed so that they incorporate at least three instructional methods.

b. Students are free to use any combination of methods and people within their group.

D. Allow two 10 minute periods for presentations.

1. Each student makes 10 minute presentation to the group in which he or she is a member.

APPLICATION:

Principles considered in this lesson are used here in the development of the 10 minute presentations and later in the development of 10, 20 and 40 minute lessons.

SUMMARY:

Review the methods of instruction.

EVALUATION:

The objectives of the lesson are evaluated by observing the 10 minute presentations. In addition, the session is further evaluated by examining lesson plans for the 10, 20 and 40 minute presentations.

INSTRUCTOR BACKGROUND

LESSON 7

The basic differences between the ten, twenty and forty minute presentations are the things student instructors use as aids during presentations and the types of things that they set out to teach their students.

Students are allowed all the latitude they desire in choosing lesson topics. The only restriction, of course, is that the subjects must be of such limited breadth or scope that they can be presented within the available time frame. One major task then when choosing lesson topics is that of limiting the subject to a respectable length. Students usually find that outlining the subject aids them greatly in achieving this goal.

All presentations require the use of a lesson plan. The only difference between the five and ten minute presentations is that a lesson plan must be used with the ten.

Students must use the chalkboard during their twenty minute presentation.

The first forty minute lesson is taught at the knowledge level of the cognitive domain. Students are also encouraged to use a variety of teaching aids during this presentation. The second forty minute presentation is made at the adaption level of the psychomotor domain.

- TITLE: TOPIC SELECTIONS FOR 10, 20 and (2) 40 MINUTE LESSONS
- LESSON NUMBER: 7
- TIME: 50 Minutes
- MATERIALS: Chalkboard, chalk, one piece of paper for each student.
- BEHAVIORAL OBJECTIVES:
- I. Know the differences between the 10, 20 and (2) 40 minute lessons they are to give later on in the course.
 - A. Identify the differences between the four lessons.
 - B. Choose topics suitable for the four presentations.
- CONDITIONS:
- A. Using notes taken during class.
 - B. With the aid of instructors.
- CRITERION: Standards reflecting a demonstration of minimum competency are the submission of four lesson topics which reflect the differences in requirements for the four presentations.
- INTRODUCTION: Timely choice of topics allows instructors to plan adequately for presentations.
- PRESENTATIONS:
- I. Choice of Lecture Topics
 - A. Ten Minute Lesson
 1. An extension of the five minute presentation.
 2. Students must use a lesson plan.
 3. Students choose any topic they desire.
 - B. Twenty Minute Lesson
 1. Requires a lesson plan.
 2. Presenter chooses topic.
 3. Chalkboard must be used.
 4. Other teaching aids may be used.

C. First Forty Minute Lesson

1. Presentor chooses topic.
2. Requires use of lesson plan.
3. Involves the impartation of knowledge.
4. Teaching aids may be used.

D. Second Forty Minute Lesson

1. Presentor chooses topic.
2. Requires lesson plan.
3. Involves teaching a skill.
4. Teaching aids should be used.

APPLICATION:

Students choose topics and submit them by the end of the period.

SUMMARY:

Review the four types of presentations the students will make.

EVALUATION:

The lesson objectives are evaluated by examining topic titles submitted by students to see if they conform to details provided in the lesson discussion.

INSTRUCTOR BACKGROUND

LESSON 8

A lesson plan is an instructor's guide. It provides instructors with an outline of the subject to be taught and in that way helps to keep them from getting off the subject.

There are no absolutes in lesson plan formats. The one used here was developed several years ago for use in a post-secondary setting. It has been field tested extensively and has withstood the test of time. Some of the categories may be further subdivided by those who find it is not specific enough. For example, the category, Materials, might be subdivided into equipment, handouts, AV materials and references. The Application section might include a subsection titled homework. The important point here is that the format be fluid. As instructors gain experience they should alter it to fit their own teaching styles, students and the subjects at hand.

<u>TITLE:</u>	INTRODUCTION TO LESSON PLANNING
<u>LESSON NUMBER:</u>	8
<u>TIME:</u>	50 Minutes
<u>BEHAVIORAL OBJECTIVES:</u>	As a result of attending this lecture, students should be able to: I. Describe the purpose of each section of a lesson plan.
<u>CONDITIONS:</u>	Without the use of notes or other written material.
<u>CRITERION:</u>	The standard reflecting minimum competency with this activity is the submission of a lesson plan at the end of Lesson 10 that has the proper material (as indicated by the <u>Sample Lesson Plan</u> handout) in each section.
<u>MATERIALS:</u>	Chalkboard, chalk, handouts (<u>Sample Lesson Plan</u> and <u>Example Lesson Plan</u>).
<u>INTRODUCTION:</u>	Lesson plans provide organization for lessons as well as providing a guide for instructors to follow.
<u>PRESENTATION</u>	I. The Lesson Plan A. Overview 1. Has a definite beginning, body and ending. 2. Body - the actual lesson. B. Parts 1. Use the handouts as a point of departure for a class discussion concerning the contents of each lesson plan section.
<u>APPLICATION:</u>	Students develop their own lesson plan as part of Lesson 10.
<u>SUMMARY:</u>	Review the purposes of the lesson plan.
<u>EVALUATION:</u>	The objective is evaluated through examination of lesson plans submitted at the end of Lesson 10.

INSTRUCTOR BACKGROUND

LESSON 9

Every lesson has an objective, that is, something to be accomplished during the lecture, laboratory session or field activity. Behavioral objectives, as the name suggests, reflect someone's behavior. Contemporary educational practice is to couch lesson objectives in student centered terms and to have them reflect the behaviors students should be able to demonstrate as a result of having attended a specific lecture or participated in a specific laboratory session or field activity.

The objectives of a lesson are the subject of the evaluation at the end of the lesson. During the evaluation, both students and the lesson are evaluated. The students are evaluated to ascertain whether they have mastered those things reflected in the objectives. The lesson is evaluated to determine its level of success.

Behavioral objectives include three parts, performance, conditions, and criteria. The performance reflects behavior students should be able to demonstrate. Conditions are the conditions under which students are expected to demonstrate the behavior. The criteria reflect standards of minimum acceptable performance, therefore, minimum competency levels that reflect acceptable facility with an objective. In this regard the criterion level determines the pass-fail point in competency based education.

Terms used when writing behavioral objectives should be action verbs.
They should be verbs reflecting quantifiable action.

TITLE: INTRODUCTION TO BEHAVIORAL OBJECTIVES

LESSON NUMBER: 9

TIME: 100 Minutes

BEHAVIORAL
OBJECTIVES:

As a result of applying principles learned in this lecture, students should be able to:

I. Design student oriented behavioral objectives.

CONDITION:

A. With the use of handouts provided thus far in the course.

B. Within the allotted time.

C. With the aid of instructors.

D. Within the class period.

CRITERION:

The standards reflecting minimum competency are:

A. Submission of a set of acceptable objectives for a lesson.

B. Objectives must be student centered.

C. Each objective must include performance conditions and criteria.

MATERIALS:

Chalkboard, chalk, handouts from Lesson 5, one copy of Illustrative Behavioral Terms used in Stating Learning Outcomes, one for each class member, one copy of CG-378-8, "The Many Missions of the United States Coast Guard"; for each class member.

INTRODUCTION:

Student centered behavioral objectives provide direction for all types of instructions.

PRESENTATION:

I. Student Centered Behavioral Objectives

A. Purposes

1. Provides an indication or is a statement of the behavior, students should be able to demonstrate as

a result of participation in the lesson.

2. Provides guidance for development of the lesson.
3. Signals both instructor and learner as to how learner behavior is to be modified as a result of the instruction.

B. Characteristics of Good Objectives - good objectives always include:

1. Performance - identifies behaviors students should be able to demonstrate as the result of instruction.
2. Conditions - a description of the conditions under which students should be able to demonstrate the performance or behavior cited in the objectives.
3. Criteria - criteria are standards reflecting minimum acceptable performance of an objective. They establish levels students must attain if they are to be considered a success in the lesson area.

C. Terms used in writing behavioral objectives-action words (verbs) which reflect a measurable action (action can be quantified).

1. Examples of verbs which reflect measurable action (also refer to Illustrative Behavioral Terms Used in Stating Learning Outcomes):

- a. Skate
- b. Write
- c. Draw
- d. List

2. Examples of verbs whose actions are difficult to measure:

- a. Value
- b. Appreciate
- c. Internalize

d. Smile

D. Example of a behavioral objective - as a result of attending this session and the associated activities students should be able to do consecutively thirty sit-ups and ten pullups without the use of mechanical aids.

1. Performance - do sit-ups and pullups.
2. Condition - without the use of mechanical aids.
3. Criterion - "thirty" sit-ups and "ten" pullups (the number).

E. Student Activity

1. Give each student a copy of the Many Missions of the United States Coast Guard (CG-378-8).
2. Have each student draft behavioral objectives for a lesson titled, Missions of the Coast Guard. A different topic must be chosen if this is not available in multiple copies.
3. Each student should submit a set of objectives by the end of the class.

APPLICATION: Principles developed in this lesson are applied as students develop lesson plans in sessions 10, 12, 17, 23 and 28.

EVALUATION: The objectives are evaluated by examining the lesson objectives submitted by each student. In addition, objectives formulated in sessions 10, 12, 17, 23, and 28 are evaluated.

INSTRUCTOR BACKGROUND

LESSON 10

When lessons are planned they should have a definite beginning, body and ending. In addition, there are several parts of a well planned lesson which are integrated. They are the objectives, presentation and evaluation. Once an instructor knows the subject to be taught, it is necessary to analyse the subject (sometimes called task analysis) to determine what behaviors students should be able to demonstrate upon completion of study. Once this task is completed the behavioral objectives are written.

The presentation is the third step in lesson planning. This is the part of the lesson directed at modification of student behavior to the point where students can demonstrate facility with the lesson objectives. The presentation is then closely related to the objectives in the sense that it leads students to the point where they can demonstrate the necessary behavior.

Finally, the evaluation is related to both the objectives and the presentation. As previously mentioned, the evaluation indicates procedures to be followed in determining whether students can perform at the level demanded by the objectives. Second, the evaluation ascertains the quality of the presentation.

<u>TITLE:</u>	LESSON PLANNING ACTIVITY
<u>LESSON NUMBER:</u>	10
<u>TIME:</u>	50 Minutes
<u>BEHAVIORAL OBJECTIVES:</u>	As a result of participation in this activity, students should be able to: I. Develop a complete lesson plan.
<u>CONDITIONS:</u>	A. With the use of handouts provided in Lesson 8. B. With the aid of an instructor. C. Within the allotted time period.
<u>CRITERION:</u>	The standard demonstrating minimum competency is submission of a complete lesson plan approved by an instructor.
<u>MATERIALS:</u>	Handouts from Lesson 8.
<u>INTRODUCTION:</u>	Point out the importance of having experience developing lesson plans prior to developing one for an actual teaching-learning situation.
<u>PRESENTATION:</u>	I. Development of a Complete Lesson Plan. A. Review briefly the parts of a lesson plan. B. Have each student develop a complete lesson plan. 1. Subject used in lesson plan development - "The Mission of the Coast Guard". 2. The lesson plan must be turned in by the end of the period.
<u>APPLICATION:</u>	Skills developed from this lesson are used in drafting lesson plans for the 10, 20 and 40 minute lessons.
<u>SUMMARY:</u>	Review the contents of each lesson plan section.
<u>EVALUATION:</u>	The objectives are evaluated by examining the lesson plans submitted by students for content and correctness.

INSTRUCTOR BACKGROUND

LESSON 11

The first step in teaching students a task is to complete a behavioral task analysis. A task analysis is a tool used to help instructors identify the steps through which students must proceed in learning a skill. It gives the instructor a clear picture of what is expected of the learner.

Task analyses may be subdivided in several ways. The method used here is to divide the analyses into the following categories; (1) what to do; (2) how to do it; (3) why do it and; (4) the skills needed to perform the activity listed in category (1). The "what to do" category includes a breakdown of the total task into its component parts. Each of the other categories has a companion listed for each subtask (see the handout titled Task Analysis Worksheet). The "why do it" category confuses beginning instructor students most. This category includes reasons why the items listed in the "what to do" category are actually done.

When the task analysis is complete, it is used as a point of departure in developing behavioral objectives for a demonstration-performance lesson.

TITLE: TASK ANALYSIS

TIME: 100 Minutes with 10-15 Minute Break

LESSON NUMBER: 11

BEHAVIORAL
OBJECTIVES:

As a result of participation in this activity, students should be able to do a complete task analysis.

CONDITIONS: With the aid of an instructor.

CRITERIA: The standard for demonstration of minimum competency with this activity is that the task analysis work sheet be completed in enough detail so as to allow a different student to use it for effective instruction.

MATERIALS: Task Analysis Worksheet, chalkboard, chalk.

INTRODUCTION: Explain to the students the nature of task analysis and its importance in developing skill/demonstration type lesson plans. Stress that skill/demonstration type lessons demand that the skills to be taught be broken down into their essential parts; that these parts be arranged in logical, sequential order, and that students be taught these various steps in that order.

PRESENTATION: NOTE: Throughout the entire presentation, students should be using the Task Analysis Worksheet. For purposes of this lesson, the example that is used throughout will be the "Opening a Closed Door," "Going Into a Room".

I. Steps

- A. Identify the task: Be sure that the task is stated in clear, concise and accurate terms, e.g. Opening a Closed Door, Going Into a Room.
- B. Have students break down the task into its various parts.
 1. Grasp knob.
 2. Turn knob.
 3. Push door.

C. After task has been broken into its various parts, students need to move on to Column #2 and break down each of the parts of Column #1 into the steps needed to actually accomplish the job. Be sure that students do not begin to combine steps in terms of action.

1. Use the left or right hand and grasp knob with firm grip.

D. Again in the same order, have students fill in Column #3 of the Task Analysis Sheets. Again, an explanation of each step in the task must be completed.

1. Door latch needs to be manipulated.

E. After column number three has been completely filled in, students should proceed to Column #4 and complete it. Again, insure that students do not begin to combine skills together.

1. Ability to ascertain what handle is.
2. Ability to grasp it firmly with the hand.

APPLICATION:

The task analysis process is used whenever students are taught specific skills.

SUMMARY:

Review with students that although the example just utilized is a relatively simple one, as they begin to attempt to teach complex tasks, this process becomes necessary to insure clarity and to see that no steps are inadvertently omitted. Also, review with students, the Task Analysis Worksheets, the various steps needed to break down a task into its various parts, and the necessity of this process in order to insure a complete and clear lesson.

EVALUATION:

The lesson objectives are evaluated by:

- I. Handing out a blank Task Analysis Worksheet and having the students go through the process of task analysis using the task "Tying a Shoelace".
- II. Having students pair up, exchanging their Task Analysis Worksheets, and teaching their partner how to tie a shoelace. After one partner has completed the task, roles should be reversed.

INSTRUCTOR BACKGROUND

LESSON 12

The Demonstration-Performance teaching method is perhaps the oldest instructional technique used by man. It is used every time one person shows another how to do something and then the person being shown performs that which was demonstrated. In formal instruction settings, Demonstration-Performance proceeds exactly as it did when Nethanderal was doing the teaching. As might be expected, the instructor demonstrates and the student performs.

<u>TITLE:</u>	DEMONSTRATION AND PERFORMANCE TEACHING METHODS
<u>TIME:</u>	100 Minutes
<u>LESSON NUMBER:</u>	12
<u>BEHAVIORAL OBJECTIVES:</u>	As a result of participation in this lesson, students should be able to: I. Draft a Demonstration-Performance lesson plan:
<u>CONDITIONS:</u>	A. Using class notes and other handouts. B. With aid of instructors. C. Within the allotted time.
<u>CRITERION:</u>	The standard reflecting demonstration of minimum competency is submission of an acceptable lesson plan.
<u>MATERIALS:</u>	Chalkboard, chalk, a length of six thread or other line for each student, a Task Analysis Worksheet for each student, paper for lesson plans.
<u>INTRODUCTION:</u>	The Demonstration-Performance teaching method (an extension of the Lecture-Demonstration method) is extremely valuable when attempting to teach students specific skills. Following the discussion each student will write a lesson plan which involves teaching a specific skill.
<u>PRESENTATION:</u>	I. The Demonstration-Performance Method A. Involves teaching students a specific skill. B. Steps involved in preparing a Demonstration-Performance lesson. 1. Formulate behavioral objectives for the lesson. 2. Do a task analysis of the skill to be taught. 3. Draft the Demonstration-Performance lesson plan. C. Procedures involved in teaching the lesson. 1. Instructor demonstrates the task students are to learn.

- a. Proceed slowly through each step.
- b. Make sure all students can see the instructor.
2. Have students perform the task.
 - a. Students should practice performance of the task a number of times.
3. Example: Use the square knot.
 - a. Divide the class into pairs.
 - b. Each pair of students should have a length of line.
 - c. Have one student demonstrate tying a square knot while the other watches.
 - i. Grasp one end of the length of line in each hand.
 - ii. Place the right end over the left end and twist.
 - iii. Place the new left end over the new right end.
 - iv. Pull both ends tight.
 - d. Have the second student perform the task several times.
 - e. Reverse student roles and conduct the activity again.
 - f. Have each student write a Demonstration-Performance lesson plan.
 - i. Follow the steps cited above.
 - ii. Each student should have his or her own piece of line.
 - iii. By the end of the period each student should submit a lesson plan and the associated Task Analysis Worksheet.

APPLICATION:

The principles discussed above are applied to development of this plan submitted at the end of this lesson and to the development of the 40 minute skill lesson.

SUMMARY:

Review the procedures employed in the Demonstration-Performance teaching procedure.

EVALUATION:

The objective is evaluated by examining lesson plans submitted at the end of this lesson, and those submitted prior to presentation of the 40 minute skill lesson.

INSTRUCTOR BACKGROUND

LESSON 13

Instructor performance is evaluated for a number of reasons. Some of those reasons are as a practical means of deciding upon retention, as part of the criteria for deciding upon promotion and as a means of gathering data to be used in helping instructors improve their teaching methods. The third reason is probably most important to students. Performance is evaluated in a number of ways; by peer evaluations, student evaluations and supervisor evaluation.

Student evaluations of a course most often are conducted near the end of a course. Students are usually given a prewritten evaluation form to gather opinions about various aspects of a course. They are asked to respond candidly and honestly to questionnaires. Evaluation questionnaires should be written with anonymity, that is, students should not be required to place their names on the evaluation forms. This practice tends to put student evaluators at ease and to produce more reasonable perceptions of the course than is otherwise possible. Instructors, however, should be cautioned about changes in courses made solely upon evaluation of student input. Immature students tend to rate instructors they like higher than they might otherwise be marked. Relying solely on these evaluations (which may have low reliability) leads to imprudent and unwarranted course changes.

Peer evaluations may be conducted at any time. This is an informal process in which colleagues are asked to visit classes and give input to the instructor. In this process, visitors are usually given copies of lesson plans and other course materials prior to entering the class. In addition, the evaluators are usually given evaluation sheets to complete during the class. Custom demands that following the class, evaluator and peer counselor discuss strong and weak points of the instructor's presentation.

Supervisor evaluations are conducted in much the same way as peer evaluations. The primary difference is that the instructor is given a verbal and written evaluation (other than the evaluation questionnaire).

Many evaluation forms exist. Some are provided with this lesson. Additional somewhat different, but excellent evaluation questionnaires may be obtained from the American Association of College and University Professors.

TITLE: EVALUATING INSTRUCTOR PERFORMANCE

LESSON NUMBER: 13

TIME: 200 Minutes

BEHAVIORAL
OBJECTIVES:

As a result of attending this lecture, students should be able to:

- I. Identify and describe at least three methods of evaluation.
- II. Identify attributes of instructor conduct which should be evaluated.
- III. Conduct a formal evaluation.

CONDITIONS: IV. Conduct an administrator-instructor conference.

- A. Using class handouts.
- B. With the aid of an instructor.

CRITERIA:

The standards for demonstration of minimum competency levels are:

- I. Submission of completed Guide for Evaluation of Instruction sheets for each member in which individuals participate.
- II. Submission of one copy of the Self-Evaluation Test for Instructors.
- III. Submission of one copy of the Instructor Evaluation Form for each member of the group in which the individual participates.
- IV. Successful completion of an instructor supervisor conference.

MATERIALS:

Chalkboard, chalk, one copy of each of the handouts for each member of the class; (1) Guide for Evaluation of Instruction; (2) The Self-Evaluation Test for Instructors; (3) Instructor Evaluation Form; (4) Instructor Characteristics.

INTRODUCTION:

Instructor evaluation is an extremely important segment of the education process. It allows (1) Identification of instructor strengths and weaknesses; (2) It provides a positive means of providing instructors with constructive criticism; (3) It provides stimulus for changes which lead to higher quality teaching-learning situations.

PRESENTATION:

I. Methods of Evaluation

A. Self Evaluation

1. Accomplished by the individual.
2. Provides self direction regarding need for change.
3. Methods of conduct.
 - a. By analyzing results of lesson plan evaluations.
 - b. By using self-made or published checklists, (example - Self-Evaluation Test for Instructors).
 - c. By analyzing results of student tests (evaluation of learning gain).
 - d. By analyzing student questionnaires.
 - e. By having lessons videotaped for personal review.

B. Peer Evaluation (evaluation by teaching colleagues)

1. An informal method.
2. Methods of conduct.
 - a. Classroom visits and completion of evaluation checklists. Any of the evaluation forms used as student handouts may be used for peer evaluations.
 - b. Colleague and instructor observations of videotaped lessons and discussions related thereto.

C. Formal Evaluation

1. Conducted by educational administrators who are:
 - a. Familiar with the overall educational program.
 - b. Responsible success of the educational program.
 - c. Educated in methods of objective evaluation.
2. Methods of Conduct.
 - a. Classroom visits and completion of evaluation check lists. Any of the evaluation forms used as student handouts may be used for peer evaluation.
 - b. Evaluation of student questionnaires.
 - c. Evaluation of lesson plans.
 - d. Evaluation of student grades.
3. Administrator-instructor conference.
 - a. Held soon after evaluation.
 - b. Provides instructor with a formal course evaluation. Should be:
 - i. Verbal.
 - ii. Written - Instructor should be given a copy of the evaluation.

II. Attributes of instruction to be evaluated.

- A. Depends upon the evaluation scheme being used.
 1. Examples:
 - a. Voice, gestures, speaking traits. Use Instructor Characteristics handout here.
 - b. Methods and techniques used in the classroom.

- c. Depth and scope of presentation.
- d. Student attitudes towards class and instructor.

III. Class Evaluation Activity

- A. Allow three 50 minute periods for the activity.
 - 1. One period for preparation - lesson planning, etc.
 - a. Divide the class in half.
 - b. Have each student develop a lesson plan suitable for a five minute presentation.
 - 2. Second hour.
 - a. Each student makes a five minute presentation to the group which he or she is assigned.
 - b. Each student evaluates each presenter using the handout evaluation sheets.
 - c. Upon completion of a presentation the presenter completes a self evaluation (handout).
 - 3. Third Hour.
 - a. Students are arranged in pairs for supervisor-instructor conferences such that each student has a chance to act as a supervisor.
 - b. One conference is conducted at a time while other students observe the supervisors use the evaluation sheets completed during the presentations as a basis for the conference. Supervisors should also take into account material discussed in the class handout (Instructor Characteristics) when counseling the instructors.
 - c. All evaluation sheets are turned in at the end of the fourth hour.

APPLICATION:

Students apply principles of evaluation to the micro-teaching sessions. In addition, students use the principles discussed here when evaluating the 10, 20 and 40 minute presentations.

SUMMARY:

Review briefly the methods and reasons for evaluation of instructor performance.

EVALUATION:

The objectives in this lesson are evaluated by reviewing the documents submitted by students and the counseling sessions.

INSTRUCTOR BACKGROUND

LESSON 14

Teaching aids are defined as anything used to aid instruction or facilitate learning to a greater degree than is possible without its use. They include audio and video tapes, motion pictures, slides, overhead projections, computer (CAI), chalkboards, pictures, mockups, actual tools and other equipment. Teaching aids should be used whenever possible. A note of caution, however, about their use. Beginning instructors tend to overuse such aids, a procedure which often leads to decreased rather than increased learning gain.

TITLE: INTRODUCTION TO TEACHING AIDS

TIME: 50 Minutes

LESSON NUMBER: 14

BEHAVIORAL
OBJECTIVES:

As a result of participation in this lesson, students should know and/or be able to:

- I. Know a variety of teaching aids.
 - A. Outline the purposes of teaching aids.
 - B. Define "Teaching Aids".
 - C. Distinguish between different types of teaching aids.
 - D. Explain proper uses of teaching aids.

CONDITIONS: Without the use of notes and other written materials.

CRITERIA: Standards reflecting a demonstration of minimum competency are:

- A. 80%
- B. 100%
- C. 80%
- D. 100%

MATERIALS: Chalkboard, chalk

INTRODUCTION:

In deciding whether teaching aids should be used with a lesson, several factors should be considered. Answers to the following questions should help instructors to adequately consider these factors:

- I. Who are the students?
- II. For what purpose is the lesson being conducted?
- III. Are aids and/or equipment needed to assist in the instruction?

IV. What teaching aids are available and how can they best be employed?

Instructors should be aware that although teaching aids are not always readily available, this need not create methodological problems. Many times the most effective aids are created by instructors on a "make-do" basis.

PRESENTATION:

I. Purposes for using teaching aids and benefits accrued from their use.

A. Purposes

1. Directs students' attentions to the subject.
2. Provides multi-sensory subject matter input.
3. Provides a means of demonstrating skills to be learned.
4. Draws attention to instructionally important details.
5. Provides visual reinforcement of oral presentations.
6. Adds a degree of concrete reality to subjects which are abstract when presented solely in the oral mode.

B. Student Benefits

1. Level of understanding is increased.
2. Increases immediate and long term retention.
3. Hold students interest.
4. Produces more uniform understanding across all of the students.

II. Terms Defined

A. Teaching Aids

1. Material used to assist the teaching/learning process.
 - a. Material used to illustrate or demonstrate a thing, process or concept.
 - b. Any item used by students to learn or improve skills and techniques.

III. Types of Teaching Aids

A. Demonstrative

1. Those aids at which students look, to which they listen, touch or smell as a method of facilitating understanding.
2. Examples
 - a. Chalkboard
 - i. Used to produce on the spot explanations.
 - ii. Writing should be clear, legible and large enough to be read throughout the classroom.
 - iii. Diagrams should be large enough to be seen by all; labelling should accompany diagrams if it is needed.
 - iv. Instructors should not turn their backs on their classes to use chalkboard, and attempt to explain something at the same time. Where possible, instructors should write or diagram to the side, completely turning from their classes.
 - v. If writing or explanation is sufficiently difficult or involved, it is probably better for instructors to pre-draw or do the writing before the class commences.

- vi. Key element in utilization of the board is clarity of presentation.
- b. Easel
 - i. Used to display flip charts.
- c. Visual presentation board
 - i. Used to display cards, charts and posters.
- d. Overhead projections
- e. Opaque projector
 - i. Used to project on a screen opaque pictures and other images from books and other sources.
- f. Motion pictures
 - i. Used when movement is necessary.
- g. 35mm slides and film strips
 - i. Used to display images in any desired sequence for any desired amount of time.
- h. Audio players and recorders
 - i. Can be used with slides, flip charts and overhead projections.
- i. Video tapes
 - i. Used to present real life situations.
 - ii. Used to provide instant replay.
- j. Charts, pictures and diagrams
- k. Flannel boards

IV. Procedures for using pre-made teaching aids.

A. Selection

1. Select and preview aids.
2. Incorporate aids into lesson plans.

B. Introduce Aid to Class

1. Identify questions to be answered through use of the aid.
2. Identify objectives to be achieved through use of the aid.

C. Follow-up

1. Discuss the aid.

D. Reuse

1. Allow students to watch, listen to or otherwise reuse the aid as time permits.

APPLICATION:

Students apply information gained from this lesson to the development of teaching aids used in 10, 20 and 40 minute presentations.

SUMMARY:

Conduct a brief question and answer period in which students:

I. Define Teaching Aids

- A. Any material used to illustrate or demonstrate a thing, process or concept.

II. Identify some purpose of teaching aids.

- A. Increase student retention.
- B. Increase student understanding.
- C. Hold students interest on the subject.
- D. Produce more uniform understanding of the subject than would otherwise be possible.

III. Identify types of Teaching Aids

A. Demonstrative

B. Manipulative

EVALUATION:

The objectives of this lesson are evaluated by observing students 10, 20 and 40 minute presentations for proper use of teaching aids.

INSTRUCTOR BACKGROUND

LESSON 15

The 16 mm, 27 minute USN film (MB-10961) INSTRUCTIONAL TECHNIQUE PART IV VISUAL AIDS was designed to demonstrate proper and effective use of teaching aids. It deals extensively with proper use of the chalkboard and chalkboard size two dimensional diagram boards. The authors go into great detail concerning how people, who are not artists, can reproduce highly complex pictures. The authors also stress the use of simple rather than complex drawings.

In addition to ideas presented in the film, instructors should follow two additional procedures when using films and diagrams. First, films, slides and other film type transparencies should always be previewed by the users prior to use. Second, when constructing slides, diagrams and other teaching aids, instructors should consider the effects of using color over black and white. While students perceive color as aesthetically pleasing research suggests black and white drawings and films to be better facilitators of learning than color.

TITLE: TEACHING AIDS FILM

LESSON NUMBER: 15

TIME: 50 Minutes

BEHAVIORAL OBJECTIVES: As a result of watching this film and participating in the associated discussion, students should be able to:

I. Describe proper methods used in chalkboard diagram development.

CONDITION: With the use of class notes

CRITERIA: The standard reflecting minimum competency is the drawing of one complete 27 x 42 inch single line black and white chalkboard drawing within a 20 minute period. The drawing must be of something that is to be used in one of the 40 minute presentations.

MATERIALS: Chalk, a 27 x 42 inch blackboard space for each student.

INTRODUCTION: To instructors who are familiar with the proper procedures, excellent chalkboard drawings can be made in a minimum amount of time.

PROCEDURE: Show the film and conduct a brief discussion in which the main points of the film are brought out. Following the discussion, each student makes a 27 x 42 inch chalkboard drawing.

APPLICATION: Students use the techniques developed here in their 10, 20 and two 40 minute presentations.

SUMMARY: Review the steps to be followed in making effective chalkboard drawings.

EVALUATION: The objectives set forth in this lesson plan are evaluated by examining the drawings made both for this lesson and for 10, 20 and 40 minute presentations.

INSTRUCTOR BACKGROUND

LESSON 16

As was mentioned previously, teaching aids are anything that facilitates a greater amount of learning gain than would otherwise occur in the absence of the aids. Teaching aids design thus is limited only by the imagination of the designer. There are a few basic rules to be followed when designing teaching aids. They should support instructions by emphasizing instructionally important points. They should be simple rather than highly complex and color should be used sparingly. The exception, of course, to the use of color is that when actual objects found in real life become aids or when mockups are used, there colors should be as students would find them in real life.

<u>TITLE:</u>	DEVELOPMENT OF TEACHING AIDS
<u>LESSON NUMBER:</u>	16
<u>TIME:</u>	50 Minutes
<u>BEHAVIORAL OBJECTIVES:</u>	As a result of participation in this activity, students should know or be able to: I. Know methods and procedures used in the development of teaching aids. A. Develops teaching aids. B. Describes methods and procedures used in teaching aid development.
<u>CONDITION:</u>	With instruction and aid provided by a teaching aids center instructor.
<u>CRITERIA:</u>	The standard reflecting minimum competency is the submission of an acceptable teaching aid to be used with the 10 minute presentation.
<u>MATERIALS:</u>	Those which students need in order to construct a training aid; they should be available in the teaching aids center.
<u>INTRODUCTION:</u>	To instructors who are aware, teaching aids centers provide rich sources of instructionally supportive aid.
<u>PRESENTATION:</u>	I. The teaching aids center A. Students visit the center. B. Center operator conducts the lesson.
<u>APPLICATION:</u>	Students use teaching aids in their 10, 20 and two 40 minute presentations. Each student develops a teaching aid for use with the 10 minute presentation.
<u>SUMMARY:</u>	Review the services and types of materials available through a multimedia center.
<u>EVALUATION:</u>	The objective of this lesson is evaluated by examining the type and quality of teaching aids used in the 10, 20 and 40 minute presentations.

EVALUATION:

The objective of this lesson is evaluated by examining the teaching aids submitted by students.

INSTRUCTOR BACKGROUND

LESSON 17

The ten minute presentation is the first presentation in the course where students use a lesson plan and are actually evaluated on its use. When students first use lesson plans, they tend to under plan; the result is that their presentations are short. This often stimulates foot dragging, divergence from the subject at hand and the like near the end of the session. Some of these problems may be eliminated if the students practice their presentations prior to actually giving them. If time permits, this can be done in an informal microteaching environment. Microteaching is teaching for a short period to a small group. Students may test their plans in front of two or three of their colleagues in an informal setting.

<u>TITLE:</u>	PLANNING A TEN MINUTE LESSON
<u>LESSON NUMBER:</u>	17
<u>TIME:</u>	50 Minutes
<u>BEHAVIORAL OBJECTIVE:</u>	As a result of participation in this activity, students should know and/or be able to: I. Knows principles involved in writing an adequate lesson plan for a 10 minute presentation. A. Draft a 10 minute lesson plan.
<u>CONDITIONS:</u>	A. Using class notes. B. With the aid of an instructor. C. Within the allotted time period.
<u>CRITERIA:</u>	The standard reflecting minimum competency is the submission of a lesson plan approved by an instructor.
<u>MATERIALS:</u>	Paper for lesson plans.
<u>INTRODUCTION:</u>	This period is dedicated to drafting a lesson plan for the 10 minute presentation.
<u>PRESENTATION:</u>	I. Drafting the 10 minute lesson plan. A. Use the topic chosen in lesson 7.
<u>APPLICATION:</u>	Skills developed in this lesson are applied to planning the 20 minute lesson.
<u>SUMMARY:</u>	Review what should be included in the sections of a lesson plan as well as the way in which lesson plans are used.
<u>EVALUATION:</u>	The objective of this lesson plan is evaluated by examining the lesson plans submitted by students.

INSTRUCTOR BACKGROUND

LESSON 18

A method of peer evaluation often used in beginning instructor training classes is to have half the students face the back of the classroom while the other half face forward. This allows not only evaluation of instructor mannerisms and other behaviors which might be distracting to students but also allows evaluation of only the auditory portion of presentations. Evaluation of the auditory portion alone allows input as to the effectiveness of the actual instructional portion of this presentation without other confounding distractions. Such an approach should provide a more positive overview of lesson plan adequacy and progress than would otherwise be possible.

<u>TITLE:</u>	TEN MINUTE PRESENTATIONS
<u>LESSON NUMBER:</u>	18
<u>TIME:</u>	150 Minutes. This allows sufficient time for sixteen students if a five minute break is taken between the first - second and second - third periods.
<u>BEHAVIORAL OBJECTIVES:</u>	As a result of participation in this activity, students should be able to: I. Deliver a 10 minute presentation.
<u>CONDITION:</u>	With the use of a lesson plan.
<u>CRITERIA:</u>	The standard reflecting minimum competency is completion of the presentation in not more than 10 minutes and not less than 8 minutes.
<u>INTRODUCTION:</u>	Each student makes a ten minute presentation.
<u>PRESENTATION:</u>	I. Ten minute presentations. A. If possible part of each presentation should be videotaped. B. Order of presentations is chosen randomly by an instructor.
<u>APPLICATION:</u>	Skills gained here are applied to the 20 minute presentation.
<u>SUMMARY:</u>	Review the gains accrued here from good lesson planning.
<u>EVALUATION:</u>	The objectives of this lesson are evaluated by; (1) reviewing the videotaped portion of each presentation; (2) noting the time taken for each presentation.

INSTRUCTOR BACKGROUND

LESSON 19

An added dimension included here is the use of the chalkboard. As students gain facility developing lesson plans, they must learn to add dimensions to the teaching process. One is the inclusion of teaching aids. When chalkboards are used, they must be used correctly. Printing must be large enough to be seen by everyone in the class. Printing must also be neat. If diagrams are used, they should not be so complicated that they present a cluttered appearance. Beginning instructors should remember that these are aids that should facilitate greater understanding than would be possible without them. Another item to watch is color contrast. Using combinations such as red on a green board and so on should be limited. Only those closest to the board can benefit from diagrams which use such colors. When in doubt about what colors to use, a rule of thumb is to use those which provide the greatest contrast (white on black is one). Instructors wishing to pursue the matter further should consult a color wheel. These are usually found in introductory art methods texts.

<u>TITLE:</u>	PLANNING FOR THE 20MINUTE LESSON
<u>LESSON NUMBER:</u>	19
<u>TIME:</u>	50 Minutes
<u>BEHAVIORAL OBJECTIVES:</u>	As a result of participation in this activity students should understand and/or be able to: I. Understand principles involved in writing an adequate lesson plan for a 20 minute presentation. A. Draft a 20 minute lesson plan.
<u>CONDITIONS:</u>	A. Using class notes. B. With the aid of an instructor. C. Within the allotted time period. D. Use of the chalkboard must be programmed into this lesson.
<u>CRITERIA:</u>	The standard reflecting minimum competency is the submission of a lesson plan approved by an instructor.
<u>MATERIALS:</u>	Paper for lesson plans.
<u>INTRODUCTION:</u>	In this activity, you increase your lesson planning skills.
<u>PRESENTATION:</u>	I. Drafting the 20 minute lesson. A. Topic chosen in lesson 7 is used here. B. Use of the chalkboard must be programmed into this lesson. C. Lesson plans turned in at the end of this session.
<u>APPLICATION:</u>	Skills learned here are used in developing the 40 minute lesson plan.
<u>SUMMARY:</u>	Review the uses of lesson plans.
<u>EVALUATION:</u>	The objective of this lesson is evaluated by examining lesson plans submitted by students.

INSTRUCTOR BACKGROUND

LESSON 20

Well prepared and enthusiastic instructors are usually good student motivators. No one is turned off faster than students who realize their instructor is unprepared; does not have an indepth understanding of a subject or does not know how to teach the subject. At this point, student instructors should begin to look for signals from their students which suggest they are indeed not prepared to the proper degree. Students signal their instructors in several ways. They become restless, sleepy, or begin talking, drawing, and working on things that do not pertain to the course. Student instructors should be aware of these signals as they make their twenty minute presentations and should act accordingly as they plan future lessons. There is no excuse for inadequate preparation.

- TITLE: PRESENTATION OF 20 MINUTE LESSONS
- LESSON NUMBER: 20
- TIME: 200 Minutes. This allows time for sixteen student presentations if there are two course instructors and each works with half of the students (two classrooms are required).
- BEHAVIORAL OBJECTIVES: As a result of participation in this activity, students should be able to:
- I. Deliver a 20 minute presentation.
 - A. With use of a lesson plan.
 - B. With use of the chalkboard.
- CONDITIONS:
- CRITERIA: The standard reflecting minimum competency is completion of the presentation in not more than 20 minutes nor less than 16 minutes.
- MATERIALS: Each student needs a chalkboard and chalk, one copy of the Instructor Evaluation Worksheet for each student, sufficient copies of the evaluation sheet so that the instructor will have one copy for each presenter.
- INTRODUCTION: Students present twenty minute lessons of their choosing.
- PRESENTATION:
- I. Twenty Minute Lessons
 - A. Each student makes a twenty minute presentation.
 1. A portion of each twenty minute presentation should, if possible, be videotaped.
 2. Each student evaluates each presenter using the INSTRUCTOR EVALUATION WORKSHEET.
 3. The instructor evaluates each presenter using the INSTRUCTOR EVALUATION WORKSHEET.
 4. The chalkboard must be used during this presentation.

B. Presentation Topics

1. Presenters use topics chosen in lesson 7.
2. Lesson plans developed during session 19 are used here.

APPLICATION:

Students apply skills gained here to the development of the first 40 minute presentation.

SUMMARY:

Review the benefits accrued from adequate lesson planning.

EVALUATION:

The objective of this lesson is evaluated by (1) reviewing the video taped portion of each 20 minute presentation (2) noting the time taken for the presentation (3) reviewing student evaluation (4) completing and reviewing the instructors evaluation of each student.

INSTRUCTOR BACKGROUND

LESSON 21

An integrated relationship exists between study methods and the level of success students' experience when tests are taken. The process all starts when an instructor gives his or her students a course syllabus. Well written course syllabi include not only the subject of each lesson but references from whence lesson information comes. For example, in courses where a text book is used, sections pertinent to each lecture title are listed with the title. Providing this type of information allows students to prepare for classes adequately.

During lecture preparation, students should outline the subject
(standard outline format may be used)

I.

A.

1.

a.

i.

When an outline is made, a liberal amount of space is left between sections. The details regarding each section of the outline are filled in during the lesson. Such a procedure provides students with a well written coherent collection of notes. After the class is over students should follow two additional steps. First, they should review their class notes. Second, they should compare the class notes with textual and other material, filling

in gaps in their notes and correcting misunderstandings they might have.

As a general rule about an hour should be spent preparing for a lesson and an hour should be spent after the lesson putting together textual and lesson information.

Such a procedure limits the amount of study time required for test preparation. Students should need only to briefly review their notes prior to the exam. There are few test taking steps which work universally for all students. Regardless of whether a test is objective (student chooses between test item responses provided with each item) or subjective (student supplies a written response) testees should answer questions they are sure about first and then ponder over the remaining questions.

- TITLE: STUDY METHODS AND TEST TAKING
- LESSON NUMBER: 21
- TIME: 50 MINUTES
- BEHAVIORAL OBJECTIVES: As a result of participation in this activity, students should be able to verbalize basic information regarding effective studying and maximizing performance on tests.
- CONDITIONS: Without the use of notes and other printed material.
- CRITERIA: The standard reflecting minimum competency with this information is 80%.
- MATERIALS: Chalkboard, chalk
- INTRODUCTION: Effective study is a basic tool for all persons. Many persons are years from their last study habits. Others may have failed to develop good study habits in school, but now find that they need to study for their own benefit. It is the purpose of this class to show the factors which make study both easy and productive.
- PRESENTATION:
- I. Factors Effecting Study
 - A. Physical surroundings
 1. Lighting - Poor lighting causes eye strain, which results in mental fatigue.
 2. Temperature - Uncomfortable room temperature causes body fatigue.
 3. Ventilation - Bad air effects the respiration system and the blood stream adversely with the result that the student becomes less alert.
 4. Noises outside - Noises tend to turn the students attention from the subject matter to the source of the noise and therefore they are detrimental to effective study.

B. STUDENT CONDITION

1. PHYSICAL CONDITION - AS A GENERAL RULE ONE CANNOT STUDY UNLESS THE BODY IS IN GOOD PHYSICAL CONDITION AND WELL RESTED.
2. MENTAL AND EMOTIONAL CONDITION - ONE CANNOT STUDY EFFECTIVELY IF THE MIND IS UNABLE TO CONCENTRATE UPON THE SUBJECT MATTER AS A RESULT OF MENTAL AND EMOTIONAL DISTURBANCES.
3. ATTITUDE TOWARD SUBJECT MATTER - THE STUDENT MUST BE MOTIVATED TOWARD SUBJECT MATTER.

II. METHODS OF STUDY

A. OUTLINING

1. PROPER OUTLINING PROVIDES FOR AN ORDERLY ARRANGEMENT OF SUBJECT MATTER - STEP BY STEP, LOGICAL SEQUENCE.

B. READING/REREADING

1. MOST OF THE STUDYING WILL BE IN THIS FORM:
 - a. READ WITH A PURPOSE
 - b. BE SURE YOU UNDERSTAND WHAT YOU READ
 - c. READ AT THE RIGHT SPEED FOR YOUR PURPOSE
2. HINTS FOR GOOD SKIMMING
 - a. KEEP IN MIND THE QUESTION YOU NEED ANSWERED
 - b. READ AS QUICKLY AS YOU CAN
 - c. KEEP GOING, DON'T STOP AND LOOK BACK
 - d. DON'T TRY TO UNDERSTAND EVERYTHING. LOOK FOR YOUR ANSWERS
 - e. WHEN YOU FIND THE ANSWERS, STOP AND READ CAREFULLY.

C. Note Taking

1. Writing something down helps you remember it better.
2. Good notes also make reviewing easy.

D. Diagrams, sketches

1. To give the trainer a working image, as an aid to retention and review.

E. Consistency of effort

1. Study is more effective when it is unbroken in point of time.
2. Set up goals.
3. Make complete preparation before you start to study.
4. If study time exceeds one hour, take a short rest for about 5 minutes.

F. Self-recitation.

1. Recommend for difficult subject matter.
 - a. Step one, read the assignment rapidly.
 - i. To get over-all picture.
 - ii. To discover author's organization.
 - b. Step two, read the assignment again carefully.
 - i. Formulate written questions on the main purpose.
 - ii. Write answers to the questions as sub-points.
 - c. Step three, conduct a mental drill.

- i. Reading questions one at a time and attempting to give answers from memory.
- ii. Repeat the drill on questions which are poorly answered.
- d. Step four, re-read the assignment rapidly.
 - i. To note finer details missed on previous readings.
 - ii. To see the relationship between the parts.

III. How to Plan your Study Time

- A. Find out what each course demands.
 - 1. Amount and type of lesson to be studied.
- B. Prepare a tentative study plan.
 - 1. Study time will vary.
 - 2. Study when you are at your best.
 - 3. You remember best what you have just studied - Plan your studying as close as possible to the testing time.
- C. Modify your plan as needed.
 - 1. Organize your studying and change to suit the method and time.

IV. Preparing for Test

- A. Hints for test review
 - 1. Find out when the test is given.
 - 2. If possible, what material is covered.
 - 3. Skim your textbook, review notes and related materials.

4. Think up questions and practice taking a test.
5. Review parts of the subject that you have trouble with at first.

V. How To Take a Test

- A. Read directions carefully.
- B. Read each question and be sure it is understood.
- C. Tentatively decide upon own answers to questions before consulting choices provided.
- D. If answer to question is not known, move to the next question.
 1. Return later to omitted items.
 2. Look for clues in other questions.
- E. If in doubt about an answer, try to eliminate those that are wrong.
 1. The first answer that seems right is often the correct one.
 2. Watch for english (all of the above).
- F. Check frequently to see that the responses you mark are the proper examination question.

APPLICATION:

Make clear to students the universal value of main elements of this lesson. Effective preparation and performance are constantly utilized in work and non-work situations.

SUMMARY:

Review the factors affecting good study habits and the major items relating to successful test taking.

EVALUATION:

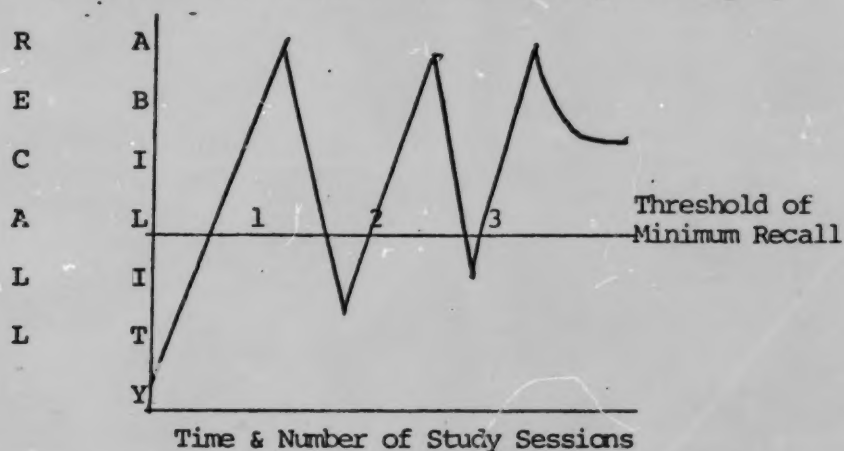
The objectives of the lesson are evaluated by asking students to list orally elements of effective study and test taking.

INSTRUCTOR BACKGROUND

LESSON 22

Learning retention appears to be aided greatly using short study, restudy sessions separated by time periods. This procedure takes into account students' assimilation rates.

A typical learning curve is shown below. A student begins studying



a subject at time zero and stops sometime later (the peak of 1). As time after study increases, ability to recall decreases, eventually to a point below the threshold of minimum recall. Once below the threshold, a person cannot recall vital information about the subject without restudy. The ability to recall decreases after the second study session but this time not as far below the threshold as after the first study session. Ability to recall decreases after the third study session but this time the curve tapers off above the threshold. At this point the person can recall all necessary details of a subject without restudy. The number of study-restudy sessions required before an individual can recall without restudy depends upon the individual, the subject, and the

procedures followed during study sessions. Certain study procedures lead students to conceptualize while others do not.

Learning transfer is the application of previously learned elements to a new learning situation. If transfer is to occur, elements of the new situation must be alike or similar to those present in previous teaching-learning situations.

- TITLE: RETENTION AND TRANSFER OF LEARNING
- LESSON NUMBER: 22
- TIME: 50 Minutes
- BEHAVIORAL OBJECTIVES: As a result of participation in this lesson, students should be able to verbalize and apply the principles discussed in this lesson.
- CONDITIONS: Without the use of written aids.
- CRITERIA: In the preparation of lesson plans students include at least two factors relating to retention and transfer.
- MATERIALS: Chalkboard, Chalk
- INTRODUCTION: If learning is to be effective, it must be retained by the student. What factors are germane to good retention? Learning is most effective when transfer can take place and a learning situation can be utilized for a variety of situations.
- PRESENTATION:
- I. Retention/Forgetting
 - A. Causes of forgetting
 1. Disuse - Most often things not in use are forgotten.
 2. Interference - Present learning may interfere with what has been previously learned. May lead to forgetting.
 3. Reorganization - Certain material or skills not learned well, when used later in a different form, tend to change.
 4. Obliterative subsumption - Once dissociable items become subsumed into more inclusive concepts or principles, and thereby lose their identity.
 5. Motivated forgetting - We constantly decide what we will try not to remember.

B. Memory

1. Large amounts of information should not be presented in a short period of time.
 - a. If the intention is to have it learned and recalled.
 - b. Forgetting increases as the amount of material increases and time passes.
2. To help master recall for longer periods of time.
 - a. Organize
 - b. Review
 - c. Practice

C. Type of material and retention

1. Ideas - Corresponding to concepts and principles are remembered for long periods of time.
2. Facts - Information forgotten quite rapidly and they are less meaningful.
3. Nonsense - Has no meaning and forgotten rapidly.

II. Transfer: Application of previous learning to different situation.

A. Retention and transfer are closely related.

1. Something must be learned in order to be remembered.
2. Something has to be remembered in order to be transferred to a new situation.
3. Motivation and initial learning.

B. Techniques to insure positive transfer.

1. Help the learner to identify meaningful relationships.
2. Provide satisfying results to correct responses.
 - a. Positive effects of success and reward facilitates learning.
 - b. Success and satisfaction are related to recall.
3. Emphasize concepts
 - a. To better understand the organization of subject matter.
 - b. Express relationships among concepts.
4. Provide opportunities for application.
 - a. Practice on a variety of problems like the initial one.
 - b. Problems of the same type, rather than identical, facilitates transfer.
5. Provide for additional learning.
 - a. Through distributed practice and study over a period of time.
 - b. Systematic review and test.

APPLICATION:

In any learning situation, the most effective learning is that which can be utilized in a variety of situations. Students respond most effectively to instruction when transfer ability can be shown.

SUMMARY:

Forgetting is explained as resulting from disuse, interference, reorganization, obliterative subsumption and motivated forgetting.

Retention is related to initial learning in that something must be learned in order to be remembered.

Retention and transfer are closely related. In order for something to be transferred to a new situation, some kind of background information must have been retained.

EVALUATION:

The lesson objectives are evaluated by checking to see if at least two factors affecting retention and transfer have been utilized in student presentations.

INSTRUCTOR BACKGROUND

LESSON 23

The forty minute lesson adds two additional dimensions to the instructor students repertoire of instructional skills. The length of this lesson is twice the length of the last (20 minute). In addition students are required to teach at a specific level of the cognitive domain (knowledge). Instructors at this point, should also be making adequate and proper use of teaching aids.

<u>TITLE:</u>	PLANNING FOR THE 40 MINUTE KNOWLEDGE LESSON
<u>LESSON NUMBER:</u>	23
<u>TIME:</u>	50 Minutes
<u>BEHAVIORAL OBJECTIVES:</u>	As a result of participation in this activity, students should understand and/or be able to: I. Understand principles involved in writing an adequate 40 minute knowledge oriented lesson plan. A. Draft a 40 minute knowledge lesson plan.
<u>CONDITIONS:</u>	A. With the aid of instructors. 1. Within the allotted time.
<u>CRITERIA:</u>	The standard reflecting minimum competency is the submission of a lesson plan approved by an instructor.
<u>MATERIALS:</u>	Paper for lesson plans.
<u>INTRODUCTION:</u>	In this activity, you apply your lesson planning skills to the development of a 40 minute presentation. I. Drafting the 40 minute knowledge lesson plan. A. Topic chosen in lesson 7 is used here. B. Impartation of knowledge must be programmed into this lesson. C. Lesson plans must be turned in by the end of the school year.
<u>APPLICATION:</u>	Skills learned here are used in developing the second 40 minute lesson plan.
<u>SUMMARY:</u>	Review the uses of lesson plans.
<u>EVALUATION:</u>	The objectives of the lesson are evaluated by reviewing the lesson plans submitted by the students.

INSTRUCTOR BACKGROUND

LESSON 24

As students move into this phase of their work, they might again be expected to be anxious. It is, therefore, imperative that they be counselled following the presentation by the course instructor. If not corrected now, faults presentors exhibit now will haunt them in the teaching they do after the course is completed.

- TITLE: PRESENTATION OF 40-MINUTE KNOWLEDGE LESSON
- LESSON NUMBER: 24
- TIME: 350 Minutes. This allows time for sixteen student presentations if there are two course instructors and each works with half of the students (two classrooms are required).
- BEHAVIORAL OBJECTIVES: As a result of participation in this activity, student should be able to:
- I. Deliver a 40 minute lesson at the knowledge of the cognitive domain.
 - A. Using a lesson plan.
 - B. Using teaching aids.
- CONDITIONS:
- CRITERIA: The standard reflecting minimum competency is that the presentation should be no shorter than 35 minutes nor longer than 40 minutes.
- MATERIALS: Students may use whatever aid they desire in an effort to make their lessons more effective. One copy of the Instructor Evaluation Worksheet for each student.
- INTRODUCTION: Each student makes a forty minute presentation of his or her choosing.
- PRESENTATION:
- I. Forty Minute Presentations
 - A. Each student makes a 40 minute presentation.
 1. A portion of each 40 minute presentation should be videotaped if possible.
 2. Each student evaluates each presenter using the Instructor Evaluation Worksheet.
 3. Presentors must use lesson plans prepared during session 23.
 - B. Presentation Topics
 1. Presentors use topics chosen during lesson 7.

APPLICATION:

Students apply skills gained here to the development of the second 40 minute presentation.

SUMMARY:

Review the benefits accrued from adequate lesson planning.

EVALUATION:

The lesson objectives are evaluated by reviewing the video taped portions of each 40 minute presentation. Student Instructor Evaluation Worksheets should be reviewed.

INSTRUCTOR BACKGROUND

LESSON 25

STEPS IN PLANNING THE TEST

- I. Delimit the Area to be Tested
- II. State the Objectives and Define Them in Specific Terms
 - A. Objectives for a Unit on Weather Maps
 1. Knows basic terms
 - a. Writes a definition of each term.
 - b. Identifies the term that represents each weather element.
 - c. Identifies the term that best fits a given weather description.
 - d. Matches the term to a picture of the concept.
 - e. Distinguishes between correct and incorrect uses of the term.
 2. Knows map symbols.
 - a. Matches each symbol with the name of the weather element it represents.
 - b. Draws the symbol for each weather element.
 - c. Identifies the meaning of each symbol shown on the weather map.
 3. Knows specific facts.
 - a. Lists the characteristics of a given weather condition.
 - b. Identifies the elements affecting a given weather condition.

- c. Names the instrument used for measuring each weather element.
 - d. Identifies the unit of measurement used in reporting each weather element on a weather map.
 - e. Distinguishes between correct and incorrect procedures for determining each weather element.
 - f. Matches the names of each cloud type with a description of its characteristics.
 - g. Identifies the weather conditions associated with each type of front.
4. Interprets weather maps.
- a. Describes the weather for a given locality.
 - b. Identifies the different types of fronts shown on weather map.
 - c. Describes the weather conditions surrounding each front shown on a weather map.
 - d. Identifies the direction of movement for each front shown on a weather map.

III. Make a Content Outline

A. Content Outline for a Unit on Weather Maps

- 1. Air pressure
 - a. Measuring and reporting air pressure.
 - b. Factors affecting air pressure.
 - c. Relation to weather changes.
- 2. Air temperature
 - a. Measuring and reporting air temperature.
 - b. Factors affecting air temperature.
 - c. Relation to weather formations.

3. Humidity and Precipitation

- a. Measuring and reporting humidity.
- b. Factors affecting humidity.
- c. Forms of precipitation.
- d. Measuring and reporting precipitation.

4. Wind

- a. Measurement of speed and direction.
- b. Factors affecting speed and direction.
- c. Symbols for reporting speed and direction.

5. Clouds

- a. Types of clouds.
- b. Characteristics of cloud types.
- c. Factors causing cloud formations.
- d. Relation to weather conditions.
- e. Symbols for cloud types.

6. Fronts

- a. Types of fronts.
- b. Formation of fronts.
- c. Weather related to fronts.
- d. Symbols for fronts.

IV. Prepare a Table of Specifications.

- A. The use of a table of specifications provides greater assurance that our test will measure a representative sample of the instructional

objectives, and the content included in the instruction. The instructional objectives are typically listed across the top of the table and the content areas are listed down the left side. Each objective and each area of content are then weighted in terms of their relative importance (e.g. amount of instructional time used), and numbers placed in the cells to indicate the number of test items to be allotted to each objective and each area of content.

A table of specifications for our unit on "weather maps" is presented in Table 1. Note that fourteen items are to be constructed for the first objective, KNOWS BASIC TERMS. Of these, two will be on "air pressure". two on "air temperature". two on "humidity and precipitation", two on "wind", three on "clouds", and three on "fronts". The remainder of the table is read in the same manner. Since many of the specific learning outcomes are measured by only two test items, our test interpretation will need to be confined to student performance

on the general instructional objectives.

Only the general instructional objectives and the general areas of content were included in Table 1. A more detailed test plan can be obtained by including all specific learning outcomes and all subject-matter topics. This latter procedure is preferred for mastery tests, but it is difficult to illustrate here because of space limitations.

TABLE 1. Table of Specifications for a 60-Item Test on Weather Maps

Instructional Objectives	Knows Basic Terms	Knows Map Symbols	Knows Specific Facts	Interprets Weather Maps	Total Items
Content Areas					
A. Air pressure	2	2	2	2	8
B. Air temperature	2	2	2	2	8
C. Humidity and Precipitation	2	2	3	3	10
D. Wind	2	3	3	4	12
E. Clouds	3	2	3	2	10
F. Fronts	3	3	3	3	12
Total Items	14	14	16	16	60

V. Set Standards of Performance

As noted in earlier chapters, setting standards of performance is easier for tests at the mastery level than at the developmental level. Where mastery is the goal, expected test performance can be described in terms on the percentage of test items must answer correctly to demonstrate mastery. The decision concerning what percentage-correct score properly indicates mastery, however, must be arbitrarily made. A standard of 80 to 85 percent correct provides a good starting point. This can be increased or decreased by taking into account the nature of the objectives, the types of test items used, and the level of mastery needed for future learning.

For our illustrative unit on "weather maps", levels of mastery might be set for each objective as follows:

<u>Objective</u>	<u>Levels of Mastery</u>
1. Knows basic terms	85%
2. Knows map symbols	100%
3. Knows specific facts	85%
4. Interprets weather maps	80%

In this illustration, knowledge of all map symbols was considered necessary, since the information is essential for map interpretation. The level of mastery for interpreting weather maps was set lower than that of the other objectives because the learning tasks are more difficult. Those levels of mastery for each objective may, of course, need to be revised somewhat in light of our experience in teaching the unit. We shouldn't set performance standards in an arbitrary manner and then treat them as infallible.

VI. Select the Item Types to Use

A. SHORT-ANSWER ITEMS

Specific Learning Outcome: Writes a definition of each term.

Directions: Write a one sentence definition of each of the following terms:

1. Weather
2. Humidity
3. Occluded front

Specific Learning Outcome: Names the instrument used for measuring each weather element.

1. The instrument used to measure the amount of precipitation in a given locality is called a (an) _____.

Specific Learning Outcome: Lists the characteristics of a given weather phenomenon.

1. List three main characteristics of a hurricane.

B. MULTIPLE-CHOICE ITEMS

Specific Learning Outcome: Identifies the units of measurement used in reporting each weather element on a weather map.

1. United States weather maps indicate air pressure in:
- A. inches
 - B. feet
 - C. pounds
 - D. millibars

C. TRUE-FALSE ITEMS

Specific Learning Outcome: Distinguishes between correct and incorrect procedures for determining each weather element.

- T F 1. Dew point is determined by cooling a sample of air until it is free of moisture.

D. MATCHING ITEMS

Specific Learning Outcome: Matches each weather instrument to the weather element it measures.

Directions: On the line to the left of each weather element in Column A, write the letter of the weather instrument in Column B that is used for measuring it. Each instrument in Column B may be used once, more than once, or not at all.

<u>Column A</u>	<u>Column B</u>
(b) air pressure	A anemometer
(e) air temperature	B barometer
(c) humidity	C hygrometer
(a) wind velocity	D rain gauge
	E thermometer
	F wind vane

VII. Write the Test Items

VIII. Assemble the Items into a Test

When a sufficient number of test items have been written for a test, the items should be reviewed and arranged into the final test form. The following steps provide guidelines for this phase of test construction.

- A. Review the test items for relevance to the learning outcomes and for freedom from technical defects.
- B. Check the set of test items as a whole to be certain that they match the table of specifications.
- C. Group together all test items that measure the same instructional objective.
- D. Arrange the test items from easy to difficult within the entire test and within each section of the test (to the extent possible).
- E. Place the items on the page in such a way that they are easy to read and easy to score.
- F. Number the test items in consecutive order.
- G. Write clear directions for the test as a whole and for each separate item type.

It is especially important that items in a criterion-referenced test be arranged by instructional objective. This enables us to more easily score and interpret test performance in terms of each objective. Interpretation can be further facilitated by clearly labeling each section of the test. Thus, for our test on "weather maps", the first section would be entitled "Knowledge of Map Symbols". and so on. The items within each

section, and the sections themselves, would then be arranged in order of increasing difficulty, to the degree that such an arrangement is feasible.

As a minimum, the direction for the test should tell students how to record the answer and what to do about guessing. Since a correction for guessing is seldom defensible with classroom tests, students are typically told to answer every item. A minimum set of directions for multiple-choice items might read as follows:

Read each item carefully and select the answer that best completes the statement or answers the question. Mark your choice by encircling the letter of the answer you select.

Try to answer every item. Your score will be the number of items answered correctly.

More elaborate directions would include a statement concerning the purpose of the test and the amount of time allowed for completing it. Most teachers give this information orally, however, so it need not be included in the written directions for the test.

IX. Provide for Test Interpretations

As noted earlier, student performance on a criterion-referenced mastery test is typically reported in terms of the percentage of items answered correctly for each objective. These "percentage-correct" scores are then compared to the required level of mastery for each objective to determine which objectives have been satisfactorily mastered. This information can be presented to the student on a simple report form like that shown in Figure 1. This need not be a separate form, of course. The same information could be added to the test blank itself, for use by the student when the test results are reviewed.

A similar report form could be used for tests at the developmental level, but here we would want to also include the student's relative standing in class on each objective. That is, how his performance on each objective compared with that of other students who took the test. This might be in terms of his simple ranking in the group or his percentile rank (per cent of the students getting a lower score). An illustrative report form of this

type is presented in Figure 2.

Including both the percentage of items answered correctly and the percentile rank for each objective, enhances our interpretation of test performance. Note in Figure 2, for example, that this student consistently answered more than fifty per cent of the items correctly but that her relative standing was below average on the last three objectives.

Test: <u>Weather Maps</u>		Student: <u>John Smith</u>	
Objective	Number Correct	Percentage Correct	Mastered (x)
1. Knows basic terms (14)*	12	86	x
2. Knows map symbols (14)	14	100	x
3. Knows specific facts (12)	12	75	
4. Interprets weather maps (16)	13	81	x

*Number of test items for each objective.

Figure 1. Report Form for Criterion-Referenced Mastery Test

Test: BiologyStudent: Mary Jones

Objective	Number Correct	Percentage Correct	Percentile Rank
1. Understands concepts (20)*	15	75	62
2. Understands principles (20)	16	80	74
3. Applies principles (20)	13	65	33
4. Applies methods (20)	12	60	27
5. Evaluates experiments (20)	11	55	20

*Number of test items for each objective.

Figure 2. Report Form for Test at the Developmental Level.

Thus both the referenced interpretation (percent-
age correct) and the norm-referenced interpretation
(percentile rank) add unique and useful information
to the description of test performance.

<u>TITLE:</u>	TEST METHODS AND PRACTICES
<u>LESSON NUMBER:</u>	25
<u>TIME:</u>	100 Minutes
<u>BEHAVIORAL OBJECTIVES:</u>	As a result of attending this lesson, students should be able to: I. Name and describe several types of test. II. Name and describe several types of test items. III. Describe the steps through which one proceeds when developing a test.
<u>CONDITIONS:</u>	With the use of notes or other printed materials.
<u>CRITERIA</u>	The standard reflecting minimum competency is 80%.
<u>MATERIALS:</u>	Chalkboard, chalk, one copy of the handout, <u>Aids to Test Construction</u> for each student.
<u>INTRODUCTION:</u>	Perhaps the final step in the educational process from a student perspective, at least is testing. There are a variety of test serving a variety of purposes. In addition there are a variety of test item types, some better than others.
<u>PRESENTATION:</u>	I. Purposes served by tests. A. Tests are methods of: 1. Evaluating testee behavior. 2. Determining whether students can demonstrate the minimum competency levels indicated by the objectives of the lesson. 3. Evaluating the success level of specific teaching methods. 4. Evaluating lesson plans. 5. Evaluating teaching styles. II. Test Types A. Pre - and Post - Tests

1. Measures the entry level abilities of students.
2. Measures the amount of student gain resulting from participation in a course.
3. Pretest give instructors an idea where to begin teaching.
4. May include all test types.

B. Aptitude Tests

1. Attempt to determine an individuals potential for something specific or general ability.
2. Norm-referenced tests
 - a. A form of achievement test.
 - b. Designed to measure an examinees status in relation to the performance of a group or others who have finished the test.
3. Criterion - referenced tests
 - a. A form of achievement test.
 - b. A test which ascertains an individuals status with respect to well defined behavioral domain.
 - i. Behavioral domain - a set of skills examinees display when called on to do so in a testing situation.
 - ii. Examples of a behavioral domain.
 - a. An individual's ability to solve a certain class of equations.
 - b. The ability to spell correctly ten words.
 - c. Sometimes called domain referenced tests.
 - d. A test which seeks to ascertain whether and how well students have met the objectives set forth in lesson plans.

A. Binary choice items

1. Any item which has only two possible answers.
 - a. True/False
 - b. Yes/No
 - c. Right/Wrong
 - d. Agree/Disagree
2. Example - True/False - Most of today's socialistic countries were once colonized by Western European nations.
3. Weaknesses
 - a. 50% chance of getting item correct without knowing anything about the subject.
 - b. Encourage verbatim memorization.
 - c. Does not allow room for relatively - most things in the real world are relatively true or false.

B. Matching items

1. Can be applied to only a small number of situations.
2. Usually good for only simple associations.
 - a. famous people and their accomplishments
 - b. definitions and terms
3. Restrict assessments to mere associations.

C. Short answer items

1. Call for an examiner to supply a word of phrase in response.

2. Types

- a. Direct Question - What was the name of individual who invented the telephone?
- b. Completion - The name of the individual who invented the telephone was _____.

3. Weaknesses

- a. Difficult to construct good items without a large time investment.
- b. Difficult to score.

4. Advantage

- a. Require students to create answers rather than just recognize them.

D. Multiple Choice Items

- 1. A selected response type item in which there are several alternative answers to the same question.

2. Forms

- a. Direction Question - In which state is the greatest amount of bituminous coal mined?
- b. Incomplete - Statement - the capital of Oregon is?

3. Weaknesses

- a. Examinees can often recognize a correct answer that without assistance they could not construct.
- b. The examinees have no opportunity to synthesize thoughts and write out creative solutions.
- c. Novice item writers have difficulty generating a sufficiently large set of plausible distractors.

4. Strengths

- a. Items have considerable flexibility - can be applied to many types of learning outcomes.

E. Essay Items

1. A constructed response test item.
2. Weaknesses
 - a. Unreliability of scoring - evaluates them differently.
 - b. Requires great amount of time to score.
 - c. Requires large amounts of time to answer - limits the amount of material that can be sampled.
3. Strengths
 - a. Measure complex learning outcomes.
 - b. Requires students to put together ideas and express them in original ways.
 - c. Requires students to produce, rather than just recognize correct items.

III. Steps in Criterion Reference Test Construction

- A. Delimit the area to be tested.
- B. State the objectives and define them in specific terms.
 1. Accomplished when lesson plan objectives are drafted.
- C. Make a content outline.
 1. Accomplished when course is initially put together.
- D. Prepare a table of specifications.
 1. Use class handout for a discussion of this section.
- E. Set standards of performance.
 1. Accomplished when course objective are drafted.

- F. Select the test item types.
- G. Write the items.
- H. Assemble the items into a test.
- I. Provide for test interpretation.
 - 1. Use handout in the discussion of this point.

APPLICATION:

Have each student accomplish steps A-F (above) for their first 40 minute presentation and by the end of the class submit a:

- (1) Content Outline
- (2) Table of Specifications
- (3) Standards for Performance

SUMMARY:

Review the types of tests and the categories of tests.

EVALUATION:

The objectives of the lesson are evaluated by examining the work submitted by students.

INSTRUCTOR BACKGROUND

LESSON 26

WRITING OBJECTIVE TEST ITEMS

The key of effective testing is to write test items that distinguish between those students who have achieved the learning outcomes being measured and those who have not. Nothing in the content or the structure of an item should prevent a knowledgeable student from responding correctly. By the same token, nothing in the content or the structure of an item should enable the nonachiever to obtain the correct answer. The ideal test item will enable the knowledgeable student, and ONLY the knowledgeable student, to answer correctly. The following rules of item construction are intended to serve as guidelines for writing such items. More specific and detailed discussions of item writing may be found in measurement textbooks.

The illustrative test items presented in this chapter will be based on the weather unit used in the last chapter to illustrate test planning.

I. General Rules for Writing Objective Test Items

Writing good objective test items is an art that requires considerable practice. However, even the beginner can write items of fairly high quality by following a series of simple but important rules. Here we shall present the general rules of item writing and in the following sections the specific rules for each item type will be listed. Although these rules are applicable to both norm-referenced and criterion-referenced testing, they have special significance for the latter because here each test item is used as a DIRECT measure of an important learning outcome.

A. Write the test item so that it calls forth the specific behavior described in the learning outcome. The process of preparing test items that are directly relevant to the specific learning outcomes to be measured is a matter of logical judgement. It consists of matching each test task to the performance task specified in the learning outcome and judging their comparability. The sample test items in the preceding chapter illustrate good agreement between test task and expected performance. Approaches using more systematic procedures for relating test tasks and expected performance. Approaches using more systematic procedures for relating test tasks to learning outcomes are being explored (Glaser and Nitko, 1971), but at this stage of development they have only limited application for classroom test construction.

B. Write the test item so that the task to be performed is clear and definite. This is accomplished by carefully formulating the problem, expressing it in simple and direct language, and following the rules for correct punctuation and grammar. Ambiguity is the bugaboo of objective test items and effective language usage is the antidote. Each item should be so carefully phrased that the intent of the item is clear to the student. We would not want a student to fail an item simply because he did not understand the type of performance he was expected to demonstrate.

C. Write the test item so that it is free from nonfunctional material. Typically a test item should contain only material that is directly relevant to the problem being presented. To add material that is extraneous to the intended purpose of the item lengthens the item unduly, and in some cases may confuse the students or provide clues to the answer. Note the wordiness of the following short-answer item.

Weather reports are more accurate today because a number of instruments are used to measure the weather. Name two of them.

This teacher wanted students to "name two instruments used to measure the weather". Why not use this more concise statement? "Name two instruments used to measure the weather". The longer version simply increases the reading load and contributes nothing to the clarity of the problem. In fact, some students might attempt to name two types of weather reports.

D. Write the test item so that irrelevant factors do not prevent the students from responding correctly. A test item should be designed to call forth a particular type of performance. In eliciting this performance, the influence of factors that are irrelevant to the main purpose of the item should be reduced as much as is feasible. A test of achievement, for example, should keep the vocabulary and sentence structure as simple as possible to prevent reading ability from distorting the results. Similarly, a test of arithmetic reasoning should keep the demands on computation skill low so that success and failure reflect differences in reasoning ability rather than differences in computational skill. Responses to test items usually include more than one type of behavior. What we need to do is write test items that maximize the behavior described in the learning outcomes and minimize all other influences.

E. Write the test item so that irrelevant clues do not lead the student to the correct answer. In concentrating on the preparation of test items that call forth the specific behavior described in the specific learning outcomes, irrelevant clues to the correct answer may be inadvertently introduced into the item. Some of the more common types of clues are (1) grammatical inconsistencies that rule out some, or all, possible wrong answers, (2) verbal associations that make the correct answer obvious, (3) specific determiners, such as "sometimes" or

"always", that increase the probability that a statement will be correct or incorrect, and (4) miscellaneous factors, such as longer more detailed statements tending to be correct. Being aware of such clues makes it possible to avoid most of them during item writing. Asking a fellow teacher to review the items is also a useful method for detecting clues that might lead the nonachiever to the correct answer.

F. Write the test item so that it does not provide clues to the answers of other items in the test. Unless special care is taken during item writing, the material included in one item may provide an answer, or partial answer, to another item. This is most likely to happen where both supply and selection-type items are included in the same test. For example, a date or name called for in a short-answer question might be unintentionally included in the stem of a multiple-choice item. As with other types of clues, awareness of the problem and a review of the items before assembling them into a test is usually sufficient to avoid the error.

G. Write the test item so that it is at the proper level of difficulty. We noted earlier the difficulty of the test item depends on the type of test we are preparing. For a criterion-referenced MASTERY test the difficulty of the items is determined by the specific nature of the learning outcomes being measured. Typically, mastery level outcomes have a low level of difficulty and no attempt should be made to increase the difficulty simply to obtain a spread of scores. When preparing a test to measure degrees of achievement beyond mastery, however, a range of difficulty for each objective is desired. Here we need to construct items ranging from easy to difficult so that we can measure a student's degree of progress toward objectives that are never fully attainable. Thus, a range of item difficulty is not necessary for measuring the mastery of minimum

essentials, but it is necessary for determining the maximum level of achievement that a student has attained.

H. Write the test item so that the correct answer is one that experts would agree upon. There is usually little difficulty in meeting this criterion when constructing items to measure knowledge of factual information. Questions of the who, what, when, where variety typically have one clearly correct answer. It is when we construct items at the understanding, application, and interpretation levels that special care is needed. Here, for example, we might expect students to indicate the "best" reason for an event, the "best" method to use, or the "best" interpretation to make. These are matters of judgment that require the answer to be clearly best and to be identified as such by experts in the area.

I. Write the test item in positive form wherever possible. There are three good reasons for stating an item in positive form. First, from a learning standpoint, it is usually desirable to emphasize the facts, concepts, and principles we want students to learn, rather than exceptions to them. Second, the fact that a student knows what is "NOT the case" provides no assurance that he knows what IS the case. For example, he may know that "the approach of a cold front is NOT indicated by cirrus clouds" but not know the type of cloud that does indicate an approaching cold front. Third, the word "not" is frequently overlooked in test items and students respond as though the statement were positive. Thus, unless the learning outcome specifically calls for the identification of the exception, it is better to phrase the item in positive terms.

J. Write enough test items to adequately sample the learning outcomes to be measured. As noted earlier, the table of specification serves as a guide for item writing. The number of items needed to measure each objective and each area of content is indicated in the table. Where it is desired to interpret the test re-

sults in terms of each specific learning outcome, as well as each general objective, however, it will be necessary to include several test items for each specific learning outcome. This may, of course, necessitate expanding the table of specifications and lengthening the test. The main point to be emphasized, here, is that the test should contain a sufficient number of items for the types of interpretations to be made and the process of item writing provides an opportune time to make a final check on the adequacy of the test sample.

II. Constructing Short-Answer Items

The short-answer item may be written in question or completion form as follows:

What is the name of the instrument used to measure the relative humidity of the air? (hygrometer)

The instrument used to measure the relative humidity of the air is called a (an) (hygrometer).

The question form is usually more natural for elementary school students and is more likely to result in a clearly formulated problem. The completion form frequently can be stated more briefly, but special care is needed in the phrasing of the statement so that there is only one possible answer.

Short-answer items are primarily useful for measuring knowledge of factual information and skill in solving numerical problems. They are not well adapted to measuring at the understanding and application levels. Thus, they are more useful in criterion-referenced mastery tests than in tests designed for the developmental level.

In addition to the general rules for writing objective test items, there are some specific rules that apply to the short-answer item.

A. Rules for Writing Short-Answer Items.

1. State the item so that the answer is limited to a number, word, or brief phrase.
2. State the item so that only one response is correct.
3. Make answer blanks equal in length (to prevent length as a clue).
4. Place answer blanks at the end of the statement.
5. For numerical answers, indicate the degree of precision expected (e.g., two decimal places).

Short-answer items are relatively easy to construct, but writing items that have only one correct response requires constant attention to the phrasing of the statements.

III. Constructing Multiple-Choice Items

The multiple-choice item consists of a STEM that is stated in question or incomplete-statement form, and several possible answers. The possible answers are called ALTERNATIVES and the incorrect alternatives are called DISTRACTERS. Their function is to distract those students who have not achieved the specific learning outcome being measured by the item. The following items illustrate the use of stems stated in question form and incomplete-statement form:

Which one of the following instruments is most useful in forecasting weather?

- A. Anemometer
- *B. Barometer
- C. Hygrometer
- D. Thermometer

The Beaufort scale is used on weather maps to indicate:

- A. air pressure
- B. air temperature
- C. precipitation
- *D. wind velocity

The stem of the item should present a clearly stated problem. This can be most easily obtained when the stem is in question form. A good practice for beginners is to start with a question and shift to an incomplete statement only when it will result in a more concise stem.

The multiple-choice item is useful for measuring learning outcomes at the knowledge, understanding and application levels. Because of its versatility, it is the most widely used of the objective-type items. Where the answer is to be selected, rather than supplied, one should typically start by writing multiple-choice items. A switch to another item type should be considered only where there are only two alternatives (e.g. map symbols and their names), changing to a matching exercise may be advantageous. Except for such special cases, however, the multiple-choice item should be used wherever selection-type items are appropriate for the learning outcome to be measured.

All of the general rules for writing objective test items, discussed earlier, apply to the multiple-choice item. In addition, there are some specific rules that serve as guidelines.

A. Rules for Writing Multiple-Choice Items

1. Write a stem that presents a single, definite problem.
2. Keep the reading level low (avoid wordiness and complex sentence structure).
3. If the stem calls for the exception, emphasize it (e.g., all of the following....EXCEPT).

4. Keep the alternatives brief (put all common wording in the stem of the item).
5. Make the alternatives similar in form and grammatically consistent with the stem.
6. Write distracters that are plausible to the nonachiever (use common errors and misconceptions).
7. Avoid clues to the correct answer (verbal associations, textbook language, length of alternatives, grammatical clues).
8. Put verbal answers in alphabetical order and numerical answers in numerical order.
9. Avoid the alternatives "none of the above" and "all of the above".
10. Review each completed item for clarity and for relevance to the specific learning outcome to be measured.

Where multiple-choice items are being designed to measure complex levels of achievement (understanding, application), some novelty is necessary. If the students are asked to identify an example of a principle, for instance, the examples should be ones that were not included in the instruction. Similarly, the applications they are asked to make should be to situations that are new to them. If students were asked to identify examples and make applications identical to those encountered in the instruction, their responses would reflect no more than the recall of past learning. Except for this added caution, the above rules for writing multiple-choice items apply to items designed for all levels of learning.

IV. Constructing True-False Items

As noted earlier, the true-false item should be restricted to those situations that are limited to two alternatives. The following item illustrates this use:

T F When a cold front passes through an area, the wind direction
*
changes.

It should be noted that there are relatively few situations, like this, where only two alternatives are possible (i.e., the wind changes or it doesn't). Even here, it might be better to switch to a multiple-choice item and ask students to identify the direction of the wind change. This would seem to be a more important outcome.

When a cold front passes, the wind direction usually changes from:

- A. east to west
- B. north to south
- *C. south to north
- D. west to east

A major shortcoming of using true-false items, where there are more than two possible alternatives, resides in the fact that FALSE items may be correctly marked on the basis of misinformation. Read the following item, for example:

T F A wind of ten miles per hour is indicated by the Beaufort number 5.
*

Students may mark this item false without knowing that the correct Beaufort number is 3. In fact, the least knowledgeable student might think the correct Beaufort number is 10. He marks the item false and receives one point for his lack of knowledge. Of course, students who think the correct number is 1, 2, 4, 6, 7, 8, or 9 also mark it false and receive one point for their misinformation. In short, where there are numerous possibilities, marking a false item false provides no evidence that the student knows the correct answer. In this particular case, a short-answer item requiring students to supply the Beaufort number would be a better measure.

Even when the true-false item is restricted to situations where only two alternatives are possible, there are still factors that limit its usefulness in criterion-referenced tests. First, since students can answer fifty percent of the items correctly by guessing, it is difficult to determine which specific learning outcomes have been satisfactorily mastered. Second, the item does not provide diagnostic information. The incorrect answers supplied on short-answer tests and the incorrect alternatives selected on multiple-choice tests, for example, both provide clues to the common errors and misconceptions of students. Third, the true-false item is limited to the measurement of relatively simple learning outcomes, such as knowledge of factual information.

If true-false items are used, special care is needed in writing clear, unambiguous statements. The following specific rules will aid in item writing.

A. Rules for Writing True-False Items

1. Write true-false items only where they are more appropriate than other item types (only two possible alternatives).
2. Write statements that can be unquestionably judged as true or false (avoid partly true statements).
3. Keep the reading level low (avoid vague terms and complex sentence structures).
4. Avoid negative statements (especially double negatives).
5. Avoid use of specific determiners (e.g., always, never, sometimes, may).
6. Keep the true and false statements approximately equal in length and number (to reduce correct guesses).

V. Constructing Matching Items

The matching item is a specialized form of the multiple-choice item. It is

used where a series of multiple-choice items would have a common set of alternatives. In such cases it is more convenient to list the stems, or PREMISES, in one column and the alternative RESPONSES in another. This, of course, makes it unnecessary to repeat the same alternatives over and over again for each stem. In the following item, note how the alternative responses in Column B could be placed under each statement in Column A to make five separate multiple-choice items.

DIRECTIONS. On the line to the left of each statement in Column A, write the letter of cloud name in COLUMN B that fits it. Each cloud name in Column B may be used once, more than once, or not at all.

Column A	Column B
<u>C</u> 1. Low, gray colored clouds.	A. Cirrus
<u>A</u> 2. High, thin, feathery looking clouds.	B. Cumulus
<u>B</u> 3. Medium height, thick, fleecy looking clouds	C. Stratus
<u>B</u> 4. Marks the approach of a cold front.	
<u>A</u> 5. Marks the approach of a warm front.	

The above item illustrates the important features of a good matching item. The material is homogeneous (types of clouds and their characteristics), the list of items to be matched is short and uneven (fewer responses), the brief responses are placed to the right (easy to scan), and the alternative responses are plausible for each premise (can be reused).

Since matching items are used to measure the ability to relate two things, they are limited to relatively simple learning outcomes. One typically starts with multiple-choice items and switches to the matching item only where it provides a more convenient means of measuring the same learning outcomes.

A. Rules for Writing Matching Items

1. Keep the material in the lists homogeneous.
2. Keep the lists relatively short.
3. Make the list of responses longer or shorter than the list of premises.
4. Place the brief responses on the right and in logical order (alphabetical or numerical).
5. Write directions indicating the basis for matching and that the responses may be used more than once.

As with the other item types, this brief list of rules merely supplements the list of general rules for constructing objective items.

TITLE:

TEST ITEM CONSTRUCTION

LESSON NUMBER:

26

TIME:

100 minutes

OBJECTIVES:

As a result of participating in this activity, students should be able to:

I. Construct Criterion - Referenced test items.

CONDITION:

A. Using handouts and other printed material

- B. With the aid of an instructor

CRITERION:

The standard reflecting minimum competency is submission of an acceptable final examination.

MATERIALS:

Chalkboard; chalk; paper; pencils; one copy of the handout, Learning Objectives for an Instructor Training Course.

INTRODUCTION:

Perhaps the most difficult phase, yet the most important phase of an instructor's job is that of evaluating specific learning outcomes. In formal situations this is accomplished using examinations whose items are written to ascertain whether testees can demonstrate competence with the objectives of course lessons. Criterion-referenced items are useful in this regard.

PRESENTATION:

I. Test and Test Item Definitions

A. Validity - Do the items measure what they are supposed to measure.

1. Content validity - how well the test samples from all the desired content that should have been learned (knowledge, skills, attitudes.)

2. Predictive Validity - predicts how well individuals would perform if placed in a specific situation. If a high test score is related to success in a given area, the test has high predictive validity.

B. Reliability - the accuracy of measurement or the consistency of measurement.

1. Tests and items have high reliability if they produce the same results over:
 - a. Multiple administrations
 - b. Between halves (odd-even items.)
2. Reliability is evaluated using mathematical formulae (split-half, test-retest)
3. Factors affecting reliability
 - a. Poorly constructed items
 - b. Test length
 - c. Test type
 - d. Test time

II. Rules used in writing objective test items

A. General rules

1. Write the test item so that it calls forth a specific behavior identified by a lesson objective.
2. Write the test item so that the test to be performed is clear and definite.
3. Write the test item so that it is free of nonfunctional material.
4. Write the test item so that irrelevant factors do not prevent the testee from responding correctly.
5. Write the test item so that irrelevant clues do not lead testees to the correct answer.
6. Write the test item so that it does not provide clues to the answers of other items in the test.
7. Write the test item so that it is at the proper level of difficulty.
8. Write the test item so that the correct answer is one that experts would agree upon.
9. Write the test item in a positive form whenever possible.

10. Write enough test items to adequately sample the learning outcomes to be measured.

B. Rules for writing short answer items

1. State the item so that the answer is limited to a number, word, or brief phrase.
2. State the item so that only one response is correct.
3. Make answer blanks equal in length (to prevent length as a clue.)
4. Place answer blanks at the end of the statement.
5. For numerical answers, indicate the degree of precision expected (e.g., two decimal places.)

C. Rules for writing multiple-choice items

1. Write a stem that presents a single definite problem.
2. Keep the reading level low (avoid wordiness and complex sentence structure.)
3. If the stem calls for the exception, emphasize it (e.g. all of the following... EXCEPT.)
4. Keep the alternatives brief (put all common wording in the stem of the item.)
5. Make the alternatives similar in form and grammatically consistent with the stem.
6. Write distracters that are plausible to the nonachiever (use common errors and misconceptions.)
7. Avoid clues to the correct answer (verbal associations, textbook language, length of alternatives, grammatical clues.)
8. Put verbal answers in alphabetical order and numerical answers in numerical order.

9. Avoid the alternatives "none of the above" and "all of the above."

10. Review each completed item for clarity and for relevance to the specific learning outcome to be measured.

D. Rules for writing true-false items

1. Write true-false items only where they are more appropriate than other types (only two possible alternatives.)

2. Write statements that can be unquestionably judged as true or false (avoid partly true statements.)

3. Keep the reading level low (avoid vague terms and complex sentence structures.)

4. Avoid negative statements (especially double negatives.)

5. Avoid use of specific determiners (e.g., always, never, sometimes, may.)

6. Keep the true and false statements approximately equal in length and number (to reduce correct guesses.)

E. Rules for writing matching items

1. Keep the material in the lists homogeneous.

2. Keep the lists relatively short.

3. Make the list of responses longer or shorter than the list of premises.

4. Place the brief responses on the right and in logical order (alphabetical or numerical.)

5. Write directions indicating the basis for matching and that the responses may be used more than once.

III. Constructing criterion referenced items and test construction,

A. Use handout for discussion

APPLICATION:

Students apply the skills addressed here to drafting a course final examination based upon the objectives listed in the Learning Objectives for an Instructor Training handout (exam to be handed in tomorrow morning.)

SUMMARY:

Review rules to be followed in test item construction.

EVALUATION:

The objectives of the lesson are evaluated by examining the tests submitted by the students.

INSTRUCTOR BACKGROUND

LESSON 27

Student counseling involves listening, evaluation of a situation and making suggestions for rectification. The first part occurs after a student has perceived a problem and is willing to concede a problem does in fact exist. Once these steps are completed, students usually seek the aid and counsel of their instructors. At this point, the best procedure instructors can follow is to be good listeners. Many times this is all that is necessary to correct the problem. Counselee's may actually derive the solution to a problem as they discuss it.

When solutions are not self evident, instructors must analyze situations in an effort to locate sources of problems. The obvious problem may be only a manifestation of the real problem, that is, it may only be a symptom. There are, for example, many problems which confound peoples abilities to learn. Family, financial, legal and other such problems may manifest themselves as inabilities to learn something.

Instructors need not possess the expertise necessary to solve all learning oriented problems. What instructors might be expected to do, however, is, after analysis of a problem, refer students to experts who may provide necessary aid. Students with pending legal problems that manifest themselves as learning problems should be referred to lawyers.

Many problems are directly related to the teaching-learning process. Students may be using improper study procedures, etc. In these cases, instructors should suggest to students, ways in which their problems may be corrected.

<u>TITLE:</u>	STUDENT COUNSELING
<u>TIME:</u>	50 Minutes
<u>LESSON NUMBER:</u>	27
<u>OBJECTIVE:</u>	As a result of participation in this lesson, students should be able to demonstrate knowledge of the objectives of counseling, as well as methods of counseling.
<u>CONDITION:</u>	Without printed aids.
<u>CRITERIA:</u>	The standard reflecting minimum competency with the material in this lesson is that during role playing situation, students show at least two types of effective listening and 2 types of counseling techniques.
<u>MATERIALS:</u>	Chalkboard, chalk, one copy of the handout, <u>Sample Handout Problems</u> for each student.
<u>INTRODUCTION:</u>	Many times instruction is not effective due to particular problems with an individual student. When this occurs, it is instructors responsibility to attempt to determine the nature of the problems and help the student attempt to find a solution.
<u>PRESENTATION:</u>	I. Skills need in counseling A. A good counselor needs to know how to listen. 1. Barriers to effective listening: a. Premature evaluation of the subject matter. b. Criticizing the delivery i. Includes speech delivery ii. Physical appearances iii. Snap judgement c. Listening for facts in lieu of understanding. d. Faking attention e. Distraction i. Internal

- ii. External disturbances
- f. Evading the difficult
- g. Submitting to emotional words

B. Good basis of listening

1. Find areas of interest - listen for things that you can put to use.
2. Judge content, not the delivery.
3. Withhold evaluation until comprehension is complete - do not get excited about a speaker until you are sure you have thoroughly understood.
4. Listen for ideas - discriminate between facts and principles.
5. Be flexible in note taking - an organizational pattern of note taking in accordance with the speaker.
6. Work at listening - concentrate on what is being said.
7. Resist distraction - adjust quickly to any kind of abnormal situation.
8. Exercise the mind in listening to difficult materials - develop an appetite for difficult and challenging material.
9. Maintain an open mind - identify and phrases most upsetting emotionally.

II. Counseling

A. Most counseling is conducted for just one reason: To get better performance from the counselee.

B. Counseling is a part of all aspects of improving the job performance - from the original training to on-the-job training.

C. Skillfull counseling can salvage a student who would otherwise fail the course or leave the school - to have student fail a course of instruction is, to say the least, very costly.

D. Needs for student counseling

1. Doing so well as to be worth some special attention.
2. Failing to measure up to expected standards of work or progress.
3. Not working up to his ability (even though they may be doing as well as others).
4. Not getting along congenially with boss or fellow workers.
5. Poor health, appearance of anxiety or depression or general need of encouragement or help of some kind.

III. Possible Methods of Counseling.

A. Adjusting the class to student's particular abilities and limitations.

1. If a student cannot perform satisfactorily in a given class, and counseling has been ineffective in bringing about the improvement needed, can the class situation be altered so they can perform satisfactorily?
 - a. Likely to take much time and work by the counselor.
 - i. What are the problems?; identify disabilities.
 - ii. What caused the problems?
 - iii. How might the problems be avoided?
 - iv. Capitalize on his skills; avoid his weaknesses and arouse his interest.
 - v. A limit should be set as to how far one will go to help.

B. Creating a better adjustment of the worker to the work situation.

1. Counseling the attitude cases, the malingerer, the social misfit, etc. - not too hard to identify.

2. Effective counseling for these cases may be the plain, old-fashioned raking over the coals, but ending in a few minutes of sympathetic encouragement, letting the counsellee leave the counseling interview with the feeling that he will get a square deal if he will make an honest effort. A good counselor never goes by surface observation; there may be a good reason why they are as they are.

IV. General rules in counseling students.

A. Prepare for each counseling session by learning details about the individual to be counseled.

a. Before a counseling interview, counselors should look up any other people who have supervised the counsellee and talk with them.

B. Appear to have unlimited time for the counseling session.

C. Obtain counsellee readiness - Normally a time is set for a counseling session.

a. Not in the case of an attitude.

D. A relationship must be established (who is to be counseled and who is doing the counseling).

E. Rapport must be established.

F. Talk about the problem.

G. Encourage the counsellee to talk and work out his own solution to his problem whenever possible.

H. Keep records of all counseling.

I. Close your counseling session as a recess, not as an end.

APPLICATION:

Students apply skills learned here to the role playing situations in the evaluation section below.

SUMMARY:

Stress the importance of counseling in creating maximum student success and review highlights of effective counseling.

EVALUATION:

The objectives of the lesson are evaluated by observing students as they conduct the following activity; pair the students up, pass out a pre-set series of role situations. Have one student take the role of a student with a problem and the other student take the role of a teacher. After this is completed, have the students switch roles, and role-play again.

INSTRUCTOR BACKGROUND

LESSON 28

Again new dimensions are introduced to the teaching-learning situation. Instructors who teach students to perform a skill must themselves be experts at performing the task. They must also understand that nothing may be assumed self-evident when students are learning to perform a new task. Visual and audio perception, as well as manual dexterity vary greatly amongst people, yet these parameters are all important to the learning process.

Beginning instructors often attempt to teach too many or too complex skills in a single session. Such a policy leads to student frustration and insufficient learning gain per unit of time invested.

TITLE:

PLANNING THE FORTY MINUTE SKILL LESSON

LESSON NUMBER:

28

TIME:

100 minutes

BEHAVIORAL
OBJECTIVES

As a result of participation in this activity, students should understand and/or be able to:

I. Understand principles involved in writing an adequate 40 minute skill oriented lesson plan.

A. Write a task analysis.

B. Draft a 40 minute skill lesson plan.

CONDITIONS:

A. Using a task analysis worksheet presented in lesson 11.

B. With the aid of instructors.

1. Within the allotted time.

CRITERION:

The standard reflecting minimum competency is the submission of a lesson plan approved by an instructor.

MATERIALS:

Paper for lesson plans.

INTRODUCTION:

In this activity you apply your lesson planning and task analysis abilities to the development of a 40 minute skill lesson.

PRESENTATION:

I. Drafting the 40 minute skill lesson.

A. Topic chosen in lesson 7 is used here.

B. A skill must be taught during this presentation.

C. The task analysis procedure must be used during the development of the plan and a task analysis work sheet submitted with the lesson plan.

D. Lesson plans should be turned in at the end of this session.

INSTRUCTOR BACKGROUND

LESSON 29

Perhaps the greatest realization student instructors come to as a result of conducting a skill lesson is that their understanding of a process causes them to look upon a skill at a totally different level than naive students. As was mentioned in the instruction background for lesson 28, instructors should not assume anything to be self evident.

TITLE:

PRESENTATION OF FORTY MINUTE SKILL LESSONS

LESSON NUMBER:

29

TIME:

325 minutes. This provides time for sixteen student presentations if there are two course instructors and each works with half of the students (two classrooms are required).

BEHAVIORAL
OBJECTIVES:

As a result of completing this activity students should be able to:

I. Deliver a 40 minute presentation that involves teaching a specific skill.

CONDITIONS:

A. Using a lesson plan.

B. Using teaching aids.

CRITERION:

The standard reflecting minimum competency is that the presentation should be no shorter than 35 minutes nor longer than 40 minutes.

MATERIALS:

Those materials chosen by individual students to support their presentations. One copy of the Instructor Evaluation Worksheet for each student.

INTRODUCTION:

Each student makes a forty minute presentation of his or her choosing.

PRESENTATION:

I. Forty Minute Presentations:

A. Each student makes a forty minute presentation.

1. A portion of each forty minutes should be videotaped if possible.

2. Each student evaluates each presenter using the Instructor Evaluation Worksheet.

3. Presentors must use lesson plans prepared during session 28.

B. Presentation Topics.

1. Presentors use topics chosen during lesson 7.

APPLICATIONS:

Students apply skills gained here to the development and presentation of future 40 minute skill oriented presentations.

SUMMARY:

Review the benefits accrued from adequate lesson planning.

EVALUATION:

The objectives of this lesson are evaluated by reviewing the videotaped portion of each 40 minute presentation. Students' Instructor Evaluation Worksheets should also be reviewed.

INSTRUCTOR BACKGROUND

LESSON 30

Courses evolve in part as a result of input from students. Instructors also alter and improve their teaching styles using information gathered through evaluations. It, therefore, is extremely important that whenever instructors solicit student course evaluations, students are encouraged to be candid. Evaluations which in essence say everything was wonderful or terrible as the case might be, without further qualification, are essentially useless.

<u>TITLE:</u>	COURSE CRITIQUE
<u>LESSON NUMBER:</u>	30
<u>TIME:</u>	25 Minutes
<u>BEHAVIORAL OBJECTIVES:</u>	As a result of critiquing the Instructor Training Course, students should know or be able to: 1. Know the basic principles required for course evaluation. A. Assign a proper Lihert scale value (strongly agree-strongly disagree) for each category of the course evaluation form. B. Make proper, objective comments for each course evaluation form.
<u>CONDITIONS:</u>	A. Using notes taken during the course. B. Same as A.
<u>CRITERIA:</u>	All items marked in the "Strongly Agree-Strongly Disagree" section of the form. A comment made in each category of the evaluation sheet.
<u>MATERIALS:</u>	One copy of CG-5027 ACTIVE DUTY TRAINING EVALUATION FORM or a similar instrument for each member of the class.
<u>INTRODUCTION:</u>	Honest and candid evaluations are an asset to the teaching-learning process. They: 1. Are a method by which instructors may learn their courses are perceived by students. 2. Provide input which can be used in course modification.
<u>PRESENTATION:</u>	Students complete the evaluation forms.
<u>APPLICATION:</u>	Students may use a similar form in their own teaching.
<u>SUMMARY:</u>	Review the benefits accrued by instructors from critiques which are complete and objective.
<u>EVALUATION:</u>	Analyze the critiques.

APPENDIX A
VOCABULARY

Adaption Level	The sixth level of the psychomotor domain. Adaption is concerned with skills that are so well developed that the individual possessing the skill can modify movement patterns to fit special requirements or to meet a problem situation.
Affective Domain	That area of study related to attitudes. It includes feelings and emotions.
Behavioral Objective	An objective written such that it reflects behavior. An objective written in terms that denote action on the part of the person it affects.
Blooms Taxonomy	An hierarchical breakdown of educational objectives. Each category reflects a level of sophistication.
Cognitive Domain	That area of study related to subject matter.
Competency Level	A level of understanding or ability.
Demonstration-Performance	A teaching method in which the instructor demonstrates the performance students are to emulate.
Psychomotor Domain	That area related to physical activity.
Self-Actualization	The highest level of Maslow's need hierarchy. It is a condition where people realize their desires and ambitions.
Self-esteem	A feeling of status or a recognition of ones talents.
Self-fulfillment	The realization of desires or the feeling which accompany the attainment of goals.
Task Analysis	The process of breaking educational outcomes into their component parts so that adequate and complete learning experiences may be designed to facilitate students achieving the outcomes.

APPENDIX B
LESSON HANDOUTS

COURSE HANDOUTS

<u>Lesson Number</u>	<u>Handout Number</u>	<u>Handout Title</u>
Intro.	1	Introduction to the Students
2	2	The Most Common Weaknesses of Instructors and Hints for Effective Teaching
3	3	Maslow's Need Theory
3	4	Human Value Situations
4	5	Example Learning Environments
5	6	Taxonomies of the Cognitive, Affective and Psychomotor Domain
8	7	Sample Lesson Plan
8	8	Example Lesson Plan
9	9	Illustrative Behavioral Terms Used in Stating Learning Objectives
11	10	Task Analysis Worksheet
13	11	Guide for Evaluation of Instruction
13	12	Utilization of Instruction Evaluation Sheet
13	13	Self-Evaluation Test for Instructors
13	14	Instructor Evaluation Form
13	15	Practice Teaching Checklist
13	16	Instructor Characteristics
25	17	Aids to Test Construction
26	18	Learning Objectives for An Instructor Training Course
27	19	Sample Handout Problems
30	20	Active Duty Evaluation Form

INTRODUCTION TO THE STUDENT

Instructor Training is a nine day, sixty-three hour classroom course intended to introduce non-educators to the teaching-learning process. It provides students instruction in the rudiments of public speaking techniques, teaching methods, and curriculum development. Further, it affords students opportunities to practice public speaking skills, use different educational methodologies, evaluate learning outcomes at the knowledge level of the cognitive domain, and the complex skill level of the psychomotor domain. Other behaviors necessary to facilitate maximum learning gain in classroom, laboratory and field environments are also practiced.

A basic assumption is made about entering students. They are not in-service educators nor have they been formally educated as such. Students are evaluated during the course of instruction. Accumulation of seventy percent of the total possible number of points is the minimum competency level for successful completion of the course. Students who attain the minimum, are awarded a grade of pass and a course completion certificate. Students are evaluated on the following.

<u>ACTIVITY</u>	<u>% OF TOTAL</u>
1) 10 Min. Lesson	5
2) 30 Min. Lesson	13
3) 40 Min. Knowledge Lesson	25
4) 40 Min. Skill Lesson	25
5) Behavior Objective Exercise	8
6) Task Analysis	8
7) 40 Min. Skill Lesson Plan	8
8) Test Construction Exercise	8

THE MOST COMMON WEAKNESSES OF INSTRUCTORS AND HINTS FOR EFFECTIVE TEACHING

This handout is intended to be used in conjunction with Lesson 2, "Problems of Beginning Instructors". It has been divided into two sections; Instructor Weaknesses and Instructor Qualities.

I. Instructor Weaknesses.

- A. Use of poor questioning techniques.
- B. Lack of enthusiasm.
- C. Wasting class time.
- D. Failing to prepare adequately for lessons.
- E. Unwillingness to recognize individual differences among students.
- F. Assuming students know more than they do.
- H. Failing to give reasonable and understandable homework assignments.
- I. Careless use of chalkboard and other teaching aids.
- J. Excessive use of poorly selected films.
- K. Failing to learn and use students' names.
- L. Using class as an audience while discussing personal problems and points of view.
- M. Ridiculing students and giving public reprimands.
- N. Letting insignificant events upset classwork.
- O. Engaging in arguments with students.
- P. Discouraging questions.
- Q. Failure to use demonstrations.
- R. Over-use of lectures.
- S. Unfair evaluation of student performance.
- T. Talking too low, too long and too rapidly.
- U. Use. of sarcasm.
- V. Failing to emphasize a reasonable number of key points in each class period.
- W. Use of unreliable written tests.

II. Instructor Qualities

A. Qualities of good instructors go far beyond expert knowledge of the subject matter.

1. They must impart their knowledge in a clear and interesting manner.
2. They must control their students and at the same time maintain a good rapport with them; they should be courteous to their students.
3. They must provide an effective learning environment.

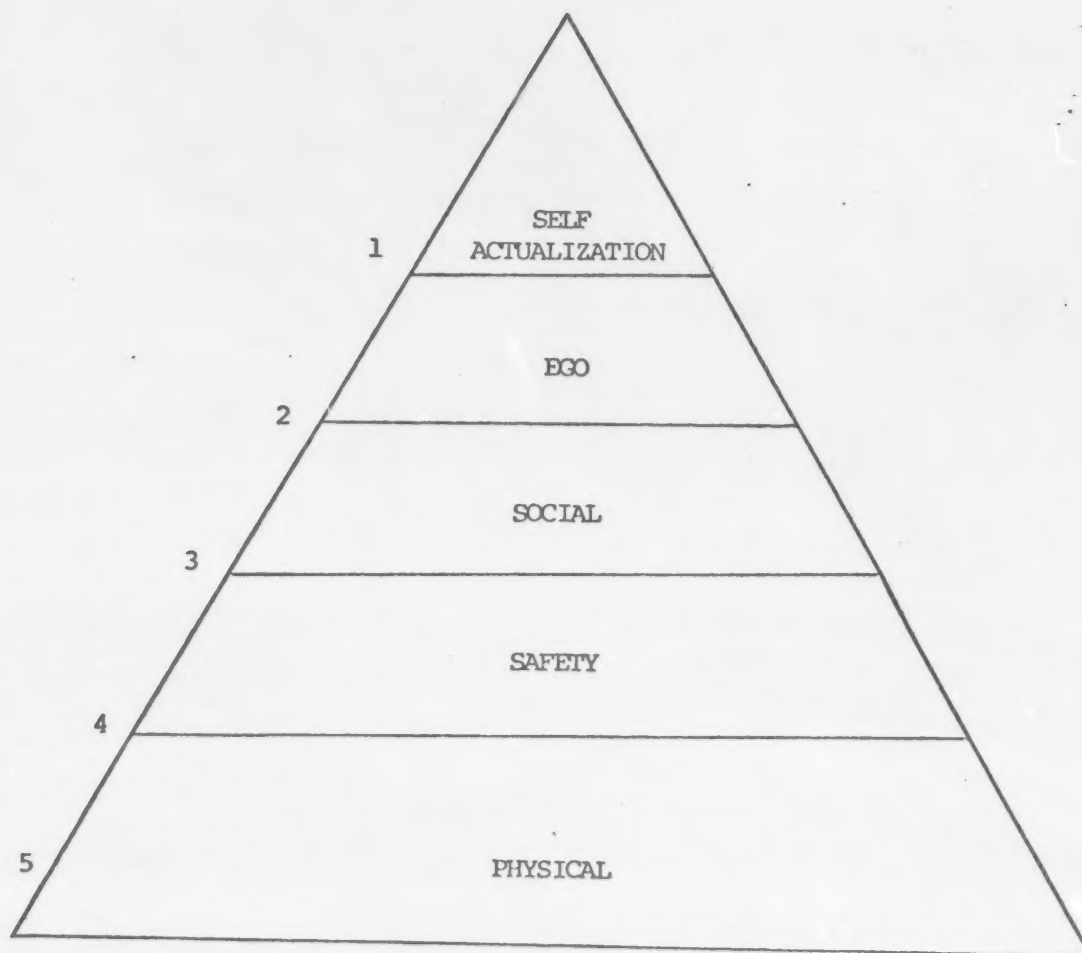
B. Suggestions for the instructor include:.

1. Use language suitable to the group. Avoid complicated words where simple words will do.
2. Be so well versed in the subject matter and familiar with your lesson plans that you are able to talk directly to the class, without having to read your lesson plans.
3. Do not orate or mumble. Employ interesting, earnest, conversational tones and natural personal manner. Look into the faces of your students as if you were talking to them individually, and look from one to another.
4. Exhibit a sense of humor in some way other than by using funny stories as illustrations. Phrase your remarks where possible, in an interesting manner.
5. Be in control of the class at all times. Assure that all students participate; do not allow the class to be dominated by a few vocal students.
6. Ask questions frequently and involve students in discussions.
7. Use body action appropriately - personal mannerisms can be distracting; gestures can be effective.

MASLOW'S NEED THEORY

LEVELS OF PRIORITY

highest number indicates
that which must be filled
first.



HUMAN VALUE SITUATIONS

1. When teaching, an instructor rarely knows the subject matter. What value or values are missing?

2. Instructor clearly explains course objectives, testing procedures and classroom conduct. Which values considered in this case?

3. A student is doing poorly and rationalizes that it is the fault of the instructor. An instructor volunteers to counsel the student and provide help with assignments. What values are considered here?

4. The instructor is not in the classroom during a workshop period. Which values have not been considered in this situation?

5. A student continually uses profanity in the classroom. The instructor asks him in private to refrain from using profanity. What values are related to the elimination of profanity?

6. Students do not have access to instructor other than during class time. What values are missing?

INSTRUCTOR TRAINING

EXAMPLE LEARNING ENVIRONMENTS

DIRECTIONS:

Three situations are presented below. Students should analyze each situation in terms of concepts presented in Lesson 4. The analyses should result in predictions of learning success and the reasons for said success (or lack thereof as the case might be).

Situation 1. Thirty students gather in a well lighted, comfortable lecture hall for the first session of a course titled, Theory of Outboard Motor Operations. The students range from 20 to 40 years; half of the students are above age 30, the other half below. All are mechanics and all began work on engines at age 18 years. In addition, 5 under 30 have studied automotive engineering in school and are about to receive AAS degrees. The oldest member (40) is in the process of divorce proceedings and one of the AAS people is in bankruptcy court.

Situation 2. Several military students arrive at school late in the evening after long flights and are told to report to class at 0700 the next morning in dress uniform. Upon arrival at school they learn the first morning is a practical fire fighting lab. They then march in formation to the lab site to begin the exercise.

Situation 3. Five U.S. Coast Guard Petty Officers are ordered to attend an alcohol rehabilitation seminar. None of the people drink, but three are smokers and two are overweight. All have recently received orders to independent duty in Korea, non dependents allowed. Three of five are married with children. All were scheduled to go on leave prior to travel to Korea, but now must attend this three day school.

TAXONOMIES OF THE COGNITIVE, AFFECTIVE AND PSYCHOMOTOR DOMAINS

Major categories in the Cognitive, Affective and Psychomotor domains are listed below by domain. Each category within a domain is lettered from "A" and each letter respectively higher represents a higher level of sophistication. The knowledge level of the Cognitive domain therefore is the lowest or least sophisticated level of learning.

The hierarchies of objectives are extremely important in lesson development and evaluation.

I. The Cognitive Domain

- A. Knowledge. Knowledge is the remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.
- B. Comprehension. Comprehension is the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating future trends. These learning outcomes are one step beyond the simple remembering and represent the lowest level of understanding.
- C. Application. Application refers to the ability to use learned material in new and concrete situations. This includes the application, rules, methods, concepts, principles, laws and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.

- D. Analysis. Analysis is the ability to break down material into its component parts so that its organizational structure may be understood. This includes the identification of the parts, analysis of the relationships between parts, and recognition of the organizational principles. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural form of the material.
- E. Synthesis. Synthesis is the ability to put parts together to form a new whole. This involves the production of a unique communication, a plan of operations, or a set of abstract relations. Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns or structures.
- F. Evaluation. Evaluation is concerned with the ability to judge the value of material for a given purpose. The judgements are based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and students may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all the other categories, plus conscious value judgements based on clearly defined criteria.

II. The Affective Domain

- A. Receiving. Receiving refers to the student's willingness to attend to particular phenomena or stimuli. From a teaching standpoint, it is concerned with getting, holding, and directing the student's attention. Learning outcomes in this area range from the simple awareness that a thing exists to selective attention. Receiving represents the lowest level of learning outcomes in the affective domain.

- B. Responding. Responding refers to active participation by the student. At this level students not only attend to a particular phenomenon, but also react to it in some way. Learning outcomes in this area may emphasize acquiescence in responding, willingness to respond or satisfaction in responding. The higher levels of this category include those instructional objectives that are commonly classified under "interests"; that is, those that stress seeking out and enjoyment of particular activities.
- C. Valuing. Valuing is concerned with the worth or value a student attaches to a particular object, phenomenon, or behavior. This ranges in degree from the more simple acceptance of a value to the more complex level of commitment. Valuing is based on the internalization of a set of specified values, but clues to these values are expressed in the student's overt behavior. Learning outcomes in this area are concerned with behavior that is consistent and stable enough to make the value clearly identifiable. Instructional objectives that are commonly classified under "attitudes" and "appreciation" would fall into this category.
- D. Organization. Organization is concerned with bringing together different values, resolving conflicts between them, and beginning the building of an internally consistent value system. Thus the emphasis is on comparing, relating, and synthesizing values. Learning outcomes may be concerned with the conceptualization of a value or with the organization of a value system. Instructional objectives relating to the development of a philosophy of life would fall into this category.
- E. Characterization by a Value or Value Complex. At this level of the affective domain, individuals have value systems that have controlled their behavior for a sufficiently long time for them to have developed a charac-

teristic "life style". Thus the behavior is pervasive, consistent, and predictable. Learning outcomes at this level cover a broad range of activities, but the major emphasis is on the fact that the behavior is typical or characteristic of the student. Instructional objectives that are concerned with the student's general adjustment would be appropriate here.

III. The Psychomotor Domain

- A. Perception. The first level is concerned with the use of the sense organs to obtain cues that guide motor activity. This category ranges from sensory stimulation to translation.
- B. Set. Set refers to readiness to take a particular type of action. This category includes mental set, physical set, and emotional set. Perception of cues serves as an important prerequisite for this level.
- C. Guided Response. Guided response is concerned with the early stages in learning a complex skill. It includes imitation and trial and error. Adequacy of performance is judged by an instructor or by a suitable set of criteria.
- D. Mechanism. Mechanism is concerned with performance acts where the learned responses have become habitual and the movements can be performed with some confidence and proficiency. Learning outcomes at this level are concerned with performance skills of various types, but the movement patterns are less complex than at the next higher level.
- E. Complex Overt Response. Complex Overt Response is concerned with the skillful performance of motor acts that involve complex movement patterns. Proficiency is indicated by a quick, smooth, accurate performance, requiring a minimum of energy. This category includes resolution of uncer-

tainty and automatic performance. Learning outcomes at this level include highly coordinated motor activities.

- F. Adaptation. Adaptation is concerned with skills that are so well developed that the individual can modify movement patterns to fit special requirements or to meet a problem situation.
- G. Origination. Origination refers to the creating of new movement patterns to fit a particular situation or specific problem. Learning outcomes at this level emphasize creativity based upon highly developed skills.

SAMPLE LESSON PLAN

<u>TITLE:</u>	Every lesson plan should begin with a definite title. The title reflects the subject of the lesson.
<u>DATE:</u>	This is the date on which a lecture, lesson or training session is presented (e.g. 27 MAY 1980).
<u>TIME:</u>	This is the specific time period covered by a lecture (e.g. 1300-1350 or 50 minutes).
<u>LESSON NUMBER:</u>	This number reflects the position of the lesson within a series of lessons (1,2,3 etc.).
<u>BEHAVIORAL OBJECTIVES:</u>	Objectives are a series of statements reflecting the behaviors (or performance) students should be able to demonstrate as a result of presence and/or participation in the lecture, lesson or training session.
<u>CONDITIONS:</u>	These are the conditions under which students should be able to demonstrate competency with the objectives of a given lesson, (students should be able to do pushups without the use of mechanical aids).
<u>CRITERIA:</u>	A criterion is a standard of success. It identifies the minimum level of acceptable performance students must demonstrate before they are considered competent with a specific objective (80% of 30 pushups).
<u>MATERIALS:</u>	All materials used in presentation of the lesson should be listed here. The list might include chalk, chalkboard, overhead projector, film titles, texts and other reference material, etc. When reference materials are listed, complete citations should be used as well as page numbers.
<u>INTRODUCTION:</u>	The introduction provides students with an overview of the lecture and the rationale for pursuing the subject at hand.
<u>PRESENTATION:</u>	This is a step by step outline of the lecture. It should follow the objectives listed above, and serve as a guideline for the instructor.
<u>APPLICATION:</u>	Here, instructors list ways in which students apply their understanding (gained from the lesson) to real situations. It is also appropriate to list homework in this section.

SUMMARY:

A brief summarization of the lesson is provided here.

EVALUATION:

Here, the instructor lists methods by which students will be evaluated in order to ascertain whether in fact they have achieved minimum competency.

EXAMPLE LESSON PLAN

TITLE:

INTRODUCTION TO LESSON PLANNING

LESSON NUMBER:

8

TIME:

50 Minutes

BEHAVIORAL
OBJECTIVES:

As a result of attending this lecture and participating in associated activity, students should be able to:

I. Identify the purpose of each section of a lesson plan.

A. Draft a lesson plan.

CONDITION:

Using class handouts

CRITERIA:

The standard for demonstrating minimum competency are:

A. The lesson plan must have a definite beginning body and ending.

B. The lesson plan should be sufficient for a 10 minute presentation.

MATERIALS:

Chalkboard, chalk, paper for lesson plans, one copy of the handouts for each student (Sample Lesson Plan, Example Lesson Plan).

INTRODUCTION:

Lesson plans are an extremely important part of teaching - learning process. They are a guide for instructors. In addition, if well done, they identify the importance of the lesson for students, as well as, the behavior students should be able to demonstrate as a result of participation in the session.

PRESENTATION:

I. The Lesson Plan

A. Overview - all lesson plans have:

1. A definite beginning and ending.
2. A body - the actual lesson.

B. Parts

1. Use student handouts - Discuss Handouts.

APPLICATION:

Have students develop their own 10 minute lesson plans. Lesson plans should be submitted to the instructor at the end of the class period.

SUMMARY:

Review the importance of proper lesson planning, sections of a plan and the like,

EVALUATION:

Evaluate the lesson plans students have submitted to see if they meet the conditions stated in the OBJECTIVES.

ILLUSTRATIVE BEHAVIORAL TERMS
USED IN STATING LEARNING OUTCOMES

The following list is composed of terms which might be used when behavioral objectives are written. Each is written in the infinitive and each includes a brief description. The list is not intended to be complete; there are literally thousands of verbs in the English language which might be used to reflect measureable student behavior.

TO ACCEPT - Receive with consent

To Account - Furnish a justifying analysis or explanation

TO ACKNOWLEDGE - Report the receipt of something

TO ACTIVATE - Make active

TO ADJUST - Fit to meet regulations or requirements

TO ADMINISTER - Manage or direct execution, conduct, or application of something

TO ADVISE - Recommend course of action; provide information

TO ALIGN - Adjust, form, or bring to a line

TO ALTER - Make different

TO ANALYZE - Study parts, elements, or factors of a situation or problem in detail to determine course of action, solution, or outcome

TO ANNEAL - Subject to high heat, with subsequent cooling, for the purpose of softening thoroughly and rendering less brittle

TO ANNOTATE - Furnish with critical or explanatory notes

TO ANSWER - Act or reply in response to an action performed elsewhere or by another

TO APPLY - Put to use

TO APPROVE - Give official sanction

TO ARRANGE - Put in order or make preparations

TO ASSEMBLE - Put together into a unit from parts or subassemblies

TO ASSIGN - Specify, select, or designate.

TO ASSIST - Aid, help, support

TO ATTACH - Connect; fasten

TO AUDIT - Examine with intent to verify

TO AUTHENTICATE - Prove authentic, confirm, verify

TO BLEED - Drain, empty, or remove

TO BORESIGHT - Sight along a bore in order to determine lineal integrity

TO BRAZE - Solder with a relatively infusible alloy

TO BRIEF - Present the pertinent facts

TO BUILD UP - Replace worn material in order to return an article to original dimension or thickness.

TO CALIBRATE - Adjust in accordance with a previously defined standard

TO CANCEL - Mark for deletion

TO CARRY OUT - Take action on basis of orders, regulations, directives, established policies, approved plans, etc.

TO CARVE - Cut into pieces or slices

TO CASH - To give money in return for document.

TO CHANGE - Replace with another

TO CHECK - Inspect for satisfactory condition, accuracy, safety or performance.

TO CLASSIFY - Place in appropriate categories

TO CLEAN - Rid of dirt, impurities or extraneous matter

TO COIL - Form into rings or spirals

TO COLLECT - Gather together, assemble, accumulate, compile

TO COLLIMATE - Make parallel (as rays of lights); adjust the line of sight of (a level or transit)

TO COMMUNICATE - Give and receive; information, signals, or messages in any way, as by speech, gestures, writing, etc.

TO COMPACT - Pack together by vibration or rodding

TO COMPARE - Examine for similarities and differences.

TO COMPILE - Collect or gather data

TO COMPLETE - Provide with lacking parts or information.

TO COMPLY - Conform to guidelines

TO COMPOSE - Put together or create

TO COMPUTE - Determine by mathematical processes

TO CONDUCT - Lead; direct

TO CONSTRUCT - Put together systematically

TO CONTROL - Keep within limits

TO COORDINATE - Bring into common action with others

TO COPY - Notate in accordance with standard music editorial practices

TO CORRECT - Make or set right; alter or adjust to bring to a required condition; rectify; indicate errors, faults, discrepancies to be amended

TO CROP - Remove the upper or outer parts

TO CURE - Treat

TO CUT - Make or fashion by cutting

TO DECODE - Convert from code into ordinary language

TO DECONTAMINATE - Rid of contamination

TO DEENERGIZE - Remove energy

TO DEGARBLE - Correct errors in encipherment, transmission or reception of a message

TO DEGAUSS - MARINE ENGINEERING FIELD
Cancel electromagnetic field

SECURITY FIELD - Neutralize (erase) magnetic tape recordings

TO DEHYDRATE - Remove water

TO DESIGN - Plan or sketch a pattern or outline

TO DETAIL - Furnish with the smaller elements of design or finish

TO DETECT - Discover the presence or existence or something previously hidden or unclear

TO DETERMINE - Obtain definite first hand information

TO DEVELOP - Unfold more completely, advance, further, promote growth, unfold gradually, form or expand by a process of growth, make more available or usable

TO DIAGNOSE - Analyze or identify by examination and observation

TO DIFFERENTIATE - Perceive the difference; distinguish between

TO DIRECT - Regulate the activities or course, control, guide, give an order or instruction

TO DISASSEMBLE - Take apart

TO DISSEMINATE - Diffuse, distribute, spread by dispersion, circulate

TO DISTINGUISH - Recognize or discriminate one thing from another.

TO DISTRIBUTE - Divide, deal out

TO DRAFT - Make a sketch or composition

TO DRAIN - Draw off liquid completely

TO DRAW - Create a likeness or picture in outlines; sketch

TO DRESS - Display from flagstaff and from each masthead largest national ensign furnished to ship

TO DRILL - Conduct exercises in military evolutions

TO DRY - Free of water or liquid

TO DUST - Sprinkle with fine particles

TO EDIT - Revise and make ready for publication

TO EFFECT - Bring to pass; accomplish by performance; make possible by execution

TO ENCODE - Convert from ordinary language into code

TO ENERGIZE - Give energy, activate, switch on

TO ENFORCE - Compel observation or compliance

TO ENSURE - Make certain and inevitable

TO EQUATE - Treat, regard or express as equal or equivalent

TO EQUIP - Furnish for service; fit out; supply with what is necessary for efficient action

TO ERECT - Build, set up, establish

TO ESTABLISH - Institute; bring into existence

TO ESTIMATE - Form a judgement, gauge, determine or calculate approximately

TO EVACUATE - Remove something

TO EVALUATE - Determine value or worth

TO EXAMINE - Scrutinize to determine nature, condition or quality

TO EXERCISE - Put into action, use, employ practice, activate for training

TO EXPOSE - Subject to sensitive photographic film, plate, or paper to the action of radiant energy

TO FABRICATE - Construct from design or by assembling standard parts or sections

TO FAKE (DOWN) - Lay out a line in long flat bights

TO FILE - Lay away documents, papers, etc., set in order

TO FIT - Adjust to a required form and size

TO FLEMISH (DOWN) - Coil line in a flat circular arrangement

TO FLUSH - Pour liquid over or through, wash out with a liquid

TO FORECAST - Predict

TO FORM - Construct, frame

TO FORMULATE - Express or put in systematized statement

TO FORWARD - Transmit, send onward

TO GLAZE - Furnish or fit with glass

TO GUARD - Watch over to prevent escape or disclosure

TO HANDLE - Manage, control, direct, deal with, perform a function

TO HARDEN - Indurate, make hard

TO HARMONIZE - MUSIC FIELD - Create vertical combinations of different pitches and correct them according to the rules of harmonic progression

TO HEAVE - Throw or cast a line

TO IDENTIFY - Establish identity, distinguish, discriminate

TO IMPLEMENT - Accomplish, fulfill, carry out, put into effect

TO INDOCTRINATE - Instruct in rudiments or principles

TO INFORM - Give knowledge, tell, acquaint

TO INITIATE - Bring into practice or use

TO INJECT - Force or drive a liquid into some passage or cavity

TO INSERT - Put or thrust one item into another

TO INSPECT - Look at carefully, examine critically, examine or review officially

TO INSTALL - Set up or fix for use or service

TO INSTRUCT - Impart knowledge systematically, inform; furnish with directions, direct or command, train or indoctrinate

TO INTERPRET - Determine the meaning

TO INTERVIEW - Consult formally

TO INVENTORY - Prepare an itemized account of goods or stock, usually at regular intervals

TO INVESTIGATE - Observe or study by close examination and systematic inquiry

TO ISOLATE - Select from among others

TO ISSUE - Give out officially, as orders and directives, supplies and equipment

TO JOIN - Connect or link together

TO LAUNDER - Wash or iron clothing, linens

TO LOAD - Lay a load or burden, place a load or charge

TO LOCALIZE - Determine the origin or place

TO LOCATE - Designate the site or place, define the limits

TO LUBRICATE - Make smooth or slippery

TO MAINTAIN - Hold or keep in a state or condition, especially in a state of efficiency, newness, validity or cleanliness

TO MANAGE - Have direct charge, as a facility, program, project or office

TO MANEUVER - Cause to execute tactical movements

TO MANUFACTURE - Make by hand, machinery or other agency; work into suitable form for use; fabricate

TO MARK - Affix a significant identification; indicate by marks or symbols

TO MATE - Join together

TO MEASURE - Ascertain the extent, degree quantity, dimensions or capacity based upon some standard

TO MEET - Become acquainted

TO MEND - Repair clothing by sewing

TO MIX - Combine or blend into one mass

TO MONITOR - Observe, listen to, check on for compliance with instructions or regulations, or for effectiveness

TO NOTATE (MUSIC FIELD) - Represent sound by written or printed characters

TO OBSERVE Pay special attention

TO OBTAIN - Procure, secure possession

TO OPERATE - Cause to function

TO ORDER - Place an order

TO ORGANIZE - Arrange or systematize

TO OVERHAUL - Make repairs and adjustments needed to restore working order

TO PACKAGE - Wrap, box

TO PASS - Transmit from one person or group to another

TO PATCH - Mend; repair; strengthen

TO PERFORM - Carry out or execute some action

TO PHOTOGRAPH - Take a picture

TO PIN - Fasten or secure with a pin

TO PIPE - Call or direct by the boatswain's whistle

TO PLACE - Position, set in a particular place

TO PLAN - Think out beforehand

TO PLOT - Mark the position of something on a map or plan

TO PLUG - Secure by inserting a plug

TO POSITION - Put in proper place

TO POST - Transfer or carry from one record to another

TO PREPARE - Make ready, put into a state for use or application

TO PRESENT - Offer for consideration or view

TO PRESERVE - Keep from harm, damage; danger

TO PRESS - Smooth clothing with pressing equipment

TO PRINT - Letter, write in letters

TO PROCESS - Subject to a special treatment

TO PROOFREAD - Read and mark for correction

TO PROVIDE - Supply for use; furnish

TO PURGE - Cleanse or rid of impurities, foreign matter, or undesirable elements

TO REACTIVATE - Make active again

TO READ - Interpret the meaning

TO REAM - Enlarge or dress out with a reamer

TO REASSEMBLE - Refit together the parts

TO RECEIVE - Accept delivery of something

TO RECOGNIZE - Identify by some detail

TO RECOMMEND - Offer or suggest course of action

TO RECONCILE - Resolve differences in records and reports

TO RECORD - Write, enter or register for use as evidence or reproduction; transform sound by electrical or mechanical means and register it in some permanent form

TO REEVE - Fasten by passing through a hole and/or around something

TO REFACE - Line near the edge, normally with a different material

TO REFINISH - Give a new surface

TO REGISTER - Record officially

TO REGULATE - Control or govern according to a rule, principles or system; adjust for accurate operation

TO REHEARSE - Train or make proficient through practice

TO REMOVE - Change the location

TO RENDER - Give, deliver or transmit

TO REPAIR - Restore to working condition

TO REPLACE - Supply an equivalent

TO REPLENISH - Fill up, replace

TO REPORT - Give an account

TO REQUISITION - Make a formal request, application or written order for equipment, tools, paper, food or supplies

TO RESCUE - Free from confinement, violence or danger

TO RESOLVE - Analyze and decide or settle something

TO RESUME - Begin again after interruption

TO REVIEW - Examine critically or deliberately

TO REVISE - Change

TO REWRITE - Write over

TO RIG - Furnish or provide with equipment

TO ROTATE - Change position

TO ROUTE - Fix the order of procedure in a series of operations

TO SANITIZE - Make sanitary

TO SCALE - Make or pattern in regularly graded proportions

TO SCHEDULE - Designate fixed times for accomplishment of something

TO SCORE - Determine the merit, grade

TO SCREEN - Examine in order to separate into different groups

TO SEARCH - Look for, hunt through, examine explore, inquire, scrutinize

TO SECURE - Make safe, firm, fast, or tight

TO SEIZE - Marry two lines or wire rope; take possession of something by legal process

TO SELECT - Choose

TO SELL - Give up something in exchange for money or other valuable consideration

TO SEND - Dispatch by some means

TO SERVE - Perform the duties of a specific assignment

TO SERVICE - Provide minor maintenance

TO SEW - Unite or fasten by stitches made with a flexible thread or filament

TO SHARPEN - Make sharp

TO SHAVE - Sever the hair close to the skin with a razor

TO SING - Produce musical tones by means of the voice

TO SOLDER - Join with solder

TO SOLVE - Determine answers to problems

TO SORT - Arrange according to characteristics

TO SPEAK - Articulate sounds with the ordinary voice

TO SPELL - Arrange letters in a sequence that produces an end product with meaning

TO SPLICE - Join or unite by weaving together

TO STAND - Perform a duty

TO START - Begin, cause to move or operate

TO STEER - Set and hold a course, guide by mechanical means

TO STERILIZE - Free from contamination

TO STOP - Arrest progress or motion

TO STORE - Deposit in a place for preservation and/or security

TO STOW - Place or arrange in a compact mass

TO STRAIGHTEN - Make straight in direction; form

TO STRIP - Remove extraneous or superficial matter; mount a photographic negative or positive in position on copy to be used for making a printing plate

TO SUBMIT - Present or refer to others

TO SUPERVISE - Give direct orders and instructions to subordinates followed by personal observation of their activities

TO TAG - Supply with identifying marks

TO TEMPER - Bring to a degree of hardness

TO TEST - Examine critically or try out

TO TESTIFY - Make a solemn declaration under oath

TO TIE - Attach; make a bond or connection; fasten

TO TRACE - Follow the path, development; progress in history

TO TRACK - Follow the course, trace by means of evidence, such as radar blips & sonar echoes

TO TRAIN - Repetition

TO TRANSCRIBE - Translate data from one form to another

TO TRANSFER - Convey from one place, person or thing to another

TO TRANSLATE - Change or convert from one language to another

TO TRANSPORT - Carry from one place to another

TO TREAT - Act upon with some agent

TO TROUBLESHOOT - Look for malfunctions in equipment using predetermined procedures

TO TRUE - Fit, place, shape or adjust accurately

TO TUNE - Adjust or adapt to a condition, state, etc.

TO TYPE - Produce visual information by means of a typewriter

TO UNLOAD - Remove the cargo from the transport vehicle

TO UNMATE - Separate, unmatched

TO USE - Employ; carry out a purpose or action; expend or consume by thorough use

TO VERIFY - Confirm condition, correctness, status, or level

TO WELD - Unite or fuse pieces of metal by hammering, compression or heat

TO WHIP - Bind the ends of line to prevent fraying

TO WIND - Tighten the spring

TO WIRE - Use wire

TO WRITE - Compose

TO ZERO - Adjust to a null point

TASK ANALYSIS WORKSHEET

TASK: _____

ANALYST: _____

LESSON NUMBER 11
HANDOUT NUMBER 10

WHAT TO DO	HOW TO DO IT	WHY DO IT	SKILLS NEEDED
1. Grasp knob 2. Turn knob 3. Push knob	1. Use L/R hand, grasp knob with firm grip. 2. Exert pressure and turn knob clockwise until it stops. 3. Keep pressure on knob and push inward.	1. Door latch needs to be manipulated. 2. To remove door bolt from door jam. 3. To move door so that an opening is created.	1. Ability to ascertain what knob is, and grasp it firmly. 2. Ability to maintain pressure and to understand direction of clockwise. 3. Physical strength to move door and ability to comprehend "inward".

GUIDE FOR EVALUATION OF INSTRUCTION

Instructor	Evaluator
Date	Title

P = Poor F = Fine G = Good E = Excellent

INSTRUCTIONS: Circle the number for each category as appropriate. The score is then determined by multiplying the number by the appropriate weight. Total score is then determined by adding all category scores.

	P	F	G	E	WT.	SCORE
<u>INTRODUCTION</u>	1	3	4	5	x 2	_____
1. Content:	comments:					
a. Objective states						
b. Value to student						
2. Effect						
<u>PRESENTATION</u>	1	3	4	5	x 5	_____
1. Knowledge of subject matter:	comments:					
2. Organization and coverage						
a. Lesson completed						
b. Logical sequence						
c. Nomenclature covered						
d. Clearly explained						
<u>APPLICATION</u>	1	3	4	5	x 2	_____
1. Discussion of utilization of knowledge:	comments:					
<u>SUMMARY</u>	1	3	4	5	x 1	_____
1. Effective coverage by:	comments:					
a. Telling, questioning, etc.						
2. No new material						
<u>ASSIGNMENT</u>	1	3	4	5	x 1	_____
1. Specific, oral and visual	comments:					
2. Due date						
<u>TRAINING AIDS</u>	comments:					
1. On level with lesson						
2. Displayed properly						
3. Utilized effectively in lesson						
<u>USE OF LESSON PLAN</u>	1	3	4	5	x 3	_____
1. As a guide	comments:					
2. Follows objectives						
3. Amount of subject matter						

<u>INSTRUCTOR CHARACTERISTICS</u>	P 1	F 3	G 4	F 5	WT. x 2	SCORE _____
1. Voice level						
2. Eye contact						
3. Enthusiasm						

comments:

PHYSICAL CONDITIONS/CHARACTERISTICS

	1	3	4	5	x 2	SCORE _____
1. Heating/AC						
2. Lighting						
3. Ventilation						

comments:

TOTAL SCORE _____

UTILIZATION OF INSTRUCTOR EVALUATION SHEET

The instructor evaluation sheet may be utilized by students and/or class instructors as a measuring device for student performance. Using the total score on the form, an overall evaluation can be ascertained by using a predetermined evaluation classification.

<u>Classification</u>	<u>%</u>
Outstanding	90 - 100
Good	80 - 89
Fair	70 - 79
Poor	0 - 69

SAMPLE SYSTEM FOR STUDENT PRESENTATIONS

			<u>POSSIBLE</u>	
10 MINUTE LESSON	Total Score X 1	100 pts.	O	90 - 100
			G	80 - 89
			F	70 - 79
			P	0 - 69
20 MINUTE LESSON	X 3	300 pts.	O	270 - 300
			G	240 - 269
			F	210 - 239
			P	0 - 209
40 MINUTE KNOWLEDGE	X 6	600 pts.	O	540 - 600
			G	480 - 539
			F	420 - 479
			P	0 - 419
40 MINUTE SKILL LESSON	X 6	600 pts.	O	540 - 600
			G	480 - 539
			F	420 - 479
			P	0 - 419

SELF-EVALUATION TEST FOR INSTRUCTORS

Here is a chance to find out how good your teaching practices are.

Directions for using the test:

This test consists of 21 questions, each of which has been given a rating. The test assumes that you know your subject matter well. No matter how skillful you may be in teaching, you cannot be a good instructor unless you learn your subject thoroughly and keep alert for all new developments in your field.

Read each questions carefully, then consider all the good practices that add up to make the maximum score. After this, estimate as well as you can how closely you are following good practices and score yourself accordingly.

Remember this is a self test. Its value for you will depend upon how honest you are with yourself. When you have finished, analyze your performance on the appropriate sections and when appropriate, compare it with previous performances.

- | | P | F | G | E |
|--|---|---|---|---|
| 1. Do I check the physical aspects of my classroom, shop or laboratory?.... | | | | |
| Good instructors make every effort to improve the environment. They insist on: | | | | |
| (1) Good lighting | | | | |
| (2) Proper heat | | | | |
| (3) Good ventilation | | | | |
| (4) Good equipment | | | | |
| (5) Best possible arrangement of equipment | | | | |
| (6) Insist that all trash be put in receptacles so that at the end of the period, working areas are ready for the next class | | | | |
| 2. Do I introduce myself at the first session? | P | F | G | E |
| Good instructors: | | | | |
| (1) Write name on blackboard | | | | |
| (2) Pronounce their names | | | | |
| (3) Tell something of their background | | | | |
| 3. How well do I learn names? Good instructors: | P | F | G | E |
| (1) Make out seating charts, particularly for large groups | | | | |
| (2) Address questions to individuals | | | | |
| (3) Use principle of association | | | | |
| 4. Do I get essential information regarding each trainee? Here are some suggestions on how to get it: | P | F | G | E |

- (1) Use questionnaires
- (2) Interview each student
- (3) If time does not permit interviewing all trainees, talk to those who seem to need special attention

5. Am I punctual and do I expect punctuality?

P F G E

Good instructors:

- (1) Start their classes on time
- (2) Are punctual for all appointments and expect the same from their students

6. Am I an example of good military bearing and neatness? Good instructors:

P F G E

- 1) They are leaders
- (2) Good example has value

7. Do I address the class effectively?

P F G E

Good instructors:

- (1) Talk to everyone, including students in the back row
- (2) Avoid personal mannerisms, particularly distracting ones
- (3) Judge their effectiveness, to some extent by observing expressions
- (4) Do not talk to the blackboard or walls

8. Am I careful with words? Good Instructors:

P F G E

- (1) Make their points clear by using words which can be understood
- (2) Always explain the meaning of unfamiliar or technical terminology and write the terms on the blackboard
- (3) Recognize that abusive language or profanity engenders disrespect and will not force trainees to learn
- (4) Avoid sarcasm

9. Am I making every effort to meet the needs of individuals? Good instructors:

P F G E

- (1) Recognize that their students differ in interests, needs, abilities and experience. Consequently they make every effort to adjust their instruction to the individual

10. Does every student know what is to be accomplished each period? Good instructors:

P F G E

- (1) Find that they get the best response when they acquaint their classes with the objectives of each lesson in advance

- | | | | | |
|--|---|---|---|---|
| 11. Do I create learning situations? Good
Instructors: | P | F | G | E |
| (1) Know that students must be taught to think
about what they have learned | | | | |
| (2) Stimulate group discussions and employ
questions freely | | | | |
| (3) Organize the instruction, as much as pos-
sible, in the form of problems | | | | |
| 12. Do I develop a satisfactory lesson plan for
each class? A good lesson plan has: | P | F | G | E |
| (1) A simple but complete statement of what the
trainees are expected to learn | | | | |
| (2) A list of equipment and materials needed,
including training aids: charts, films,
recordings, film strips, etc. | | | | |
| (3) An introduction for the lesson | | | | |
| (4) Ways of presenting the lesson | | | | |
| (5) Application and test procedures | | | | |
| (6) Summary of lesson with provision for
reteaching facts or skills when necessary | | | | |
| 13. In the laboratory and shop, do I limit talking
to a minimum so that the men can get to work? Good
Instructors recognize: | P | F | G | E |
| (1) Valuable time is lost by too much explanation | | | | |
| (2) Experience in teaching, a study of the students
and an intelligent use of questions help a good
instructor recognize when he should stop talk-
ing. | | | | |
| (3) Limit lectures and demonstrations so as to
give their students time to "learn by doing" | | | | |
| 14. Do I prepare teaching aids before class time?
In order to make the best use of instruction time,
good instructors: | P | F | G | E |
| (1) Draw neat blackboard diagrams beforehand | | | | |
| (2) Have appropriate teaching aids ready for use | | | | |
| (3) Have necessary bulletins, texts, etc., in the
classroom | | | | |
| 15. Do I get the fullest possible use out of
teaching aids? Good instructors: | P | F | G | E |
| (1) Know when to use teaching aids | | | | |
| (2) Improvise training aids whenever necessary | | | | |
| (3) Make a careful study of a training aid before
they present it | | | | |
| 16. Do I stress practical applications? Good
instructors: | P | F | G | E |
| (1) Recognize that all learning can be applied | | | | |
| (2) Give examples of uses to which information
can be put | | | | |

17. Do you avoid waste of time, keeping every individual occupied with constructive work?

P F G E

Good instructors:

- (1) Avoid "busy work" for its own sake
- (2) Avoid aimless repetition
- (3) Have a constructive assignment for every trainee at all times

18. Am I human, yet dignified? Good instructors:

P F G E

- (1) Find out what is wrong when they do not get along well with their trainees
- (2) Do not need to remain aloof on the principle that "familiarity breeds contempt"
- (3) Dispense with unnecessary formality

19. Do I observe sound principles of learning?

P F G E

Good instructors recognize that:

- (1) It is desirable to move from the simple to the more complex; from the known to the unknown
- (2) They are working first with people; secondarily with subject matter
- (3) Trainees must be motivated
- (4) Frequent review is necessary to prevent forgetting
- (5) Summarize main points at end of period

20. Do I use the most effective type of examination?

P F G E

- (1) Generally use the multiple choice and completion type for testing specific knowledge
- (2) Generally use performance tests for a small group and for testing specific skills
- (3) Sometimes use a combination of objective types for testing general knowledge

21. Do I make full use of test results? Good instructors recognize that tests:

P F G E

- (1) Help students review and organize subject matter
- (2) Help determine depth of understanding of the subject
- (3) Help instructors find weak points in their teaching

Instructor _____

Date _____ Time _____

Evaluator _____

Title _____

INSTRUCTOR EVALUATION FORM

DIRECTIONS: Place a check mark in the scale above the word that most accurately describes the instructor being rated.

Section A - Lesson Procedures

1. INTRODUCTION (objectives, overview of material)

()	()	()	()
Outstanding	Good	Fair	Poor

2. PRESENTATION (step-by-step, thoroughness, clarity)

()	()	()	()
Outstanding	Good	Fair	Poor

3. TRAINING AIDS USAGE (used as appropriate, clear, helpful)

()	()	()	()
Outstanding	Good	Fair	Poor

4. KNOWLEDGE (knows material, preparedness, handles questions)

()	()	()	()
Outstanding	Good	Fair	Poor

Section B - Instructor Characteristics

5. VOICE (diction, audible, modulation, etc.)

()	()	()	()
Outstanding	Good	Fair	Poor

6. INSTRUCTOR MANNERISMS (hands, body, eye contact, etc.)

()	()	()	()
Outstanding	Good	Fair	Poor

7. APPEARANCE (appropriateness, grooming, uniform)

()	()	()	()
Outstanding	Good	Fair	Poor

8. ENTHUSIASM (vitality, displays confidence, openness)

()	()	()	()
Outstanding	Good	Fair	Poor

Section C - Classroom Environment

9. COMFORT (heat, ventilation, sound, student visibility, etc.)

()	()	()	()
-----	-----	-----	-----
Outstanding	Good	Fair	Poor

Section D - Student Response

10. INTEREST (student's attention, questions, note taking, etc.)

()	()	()	()
-----	-----	-----	-----
Outstanding	Good	Fair	Poor

11. ACHIEVEMENT (student's understood, can perform, succeeded, etc.)

()	()	()	()
-----	-----	-----	-----
Outstanding	Good	Fair	Poor

Comments: .

PRACTICE TEACHING CHECKLIST

Points to be Considered	Remarks	4	3	2	1
PREPARATION					
1. Did the instructor give an introduction to the topic? Was it clear? Did everyone know the objectives of the unit of instruction?					
PRESENTATION					
1. Was the presentation clear, understandable, complete, and organized?					
2. Were key points brought out sharply?					
3. Did the instructor know the subject?					
4. Were training aids used effectively?					
5. Was the lesson summarized effectively?					
6. Did appropriate evaluation take place?					
EVALUATION					
1. Did the instructor involve the class in the presentation by having the learners respond to questions or explain key points?					
2. Were the learners complimented and corrected as appropriate?					
3. Did the instructor achieve the stated objectives					

** 4. Outstanding 3. Good 2. Fair 1. Poor

INSTRUCTOR CHARACTERISTICS

INTRODUCTION

In teaching-learning situations, everything instructors do has a profound effect upon learning. Good instructors evaluate themselves periodically and strive to improve. This guide identifies some desirable characteristics.

I. Enthusiasm

- A. Make every effort to be dynamic in the classroom or teaching situation.
- B. Use as many vivid examples and teaching aids as possible.

II. Use of voice

- A. Volume, the voice must be loud enough to be heard by the furthest student, yet not so loud as to be distracting.
- B. Tempo - instructors should speak slowly enough so that:
 - 1. Students can follow the instruction.
 - 2. Students can take notes.
- C. Pitch - should be varied, not monotone.
- D. When speaking, the following should be taken into account:
 - 1. Proper enunciation
 - 2. Proper pronunciation
 - 3. Proper pace
 - 4. Punctuation
 - 5. Style: conversational rather than oratorical
 - 6. Talk to students - maintain eye contact
 - 7. Use humor when it contributes
- E. Mannerisms
 - 1. Avoid:
 - a. Arm waving

- b. Neck scratching
- c. Pacing
- d. Hand wringing
- e. Other mannerisms which divert attention from the subject at hand

F. Desirable personal traits

- 1. Honesty
- 2. Courtesy
- 3. Tact
- 4. Patience
- 5. Sincerity
- 6. Punctuality
- 7. Faithfulness
- 8. Cooperativeness
- 9. Welcome evaluation
- 10. Be on guard for mistakes

AIDS TO TEST CONSTRUCTION

Delimit the Area to be Tested

II. State the Objectives and Define Them in Specific Terms

A. Objectives for a Unit on Weather Maps

1. Knows basic terms
 - a. Writes a definition of each term
 - b. Identifies the term that represents each weather element
 - c. Identifies the term that best fits a given weather description
 - d. Matches the term to a picture of the concept.
 - e. Distinguishes between correct and incorrect uses of the term
2. Knows map symbols
 - a. Matches each symbol with the name of the weather element it represents
 - b. Identifies the meaning of each symbol shown on the weather map.
 - c. Identifies the meaning of each symbol shown on the weather map.
3. Knows specific facts.
 - a. Lists the characteristics of a given weather condition.
 - b. Identifies the elements affecting a given weather condition.
 - c. Names the instrument used for measuring each weather element.
 - d. Identifies the unit of measurement used in reporting each weather element on a weather map.
 - e. Distinguishes between correct and incorrect procedures for determining each weather element.
 - f. Matches the names of each cloud type with a description of its characteristics.
 - g. Identifies the weather conditions associated with each type of front.
4. Interprets weather maps.
 - a. Describes the weather for a given locality.
 - b. Identifies the different types of fronts shown on weather map.
 - c. Describes the weather conditions surrounding each front shown on a weather map.
 - d. Identifies the direction of movement for each front shown on a weather map.

III. Make a Content Outline

A. Content Outline for a Unit on Weather Maps

1. Air Pressure
 - a. Measuring and reporting air pressure.
 - b. Factors affecting air pressure.
 - c. Relation to weather changes.
2. Air temperature
 - a. Measuring and reporting air temperature.
 - b. Factors affecting air temperature.
 - c. Relation to weather formations.

3. Humidity and Precipitation
 - a. Measuring and reporting humidity.
 - b. Factors affecting humidity.
 - c. Forms of precipitation.
 - d. Measuring and reporting precipitation.
4. Wind
 - a. Measurement of speed and direction.
 - b. Factors affecting speed and direction.
 - c. Symbols for reporting speed and directions.
5. Clouds
 - a. Types of clouds.
 - b. Characteristics of cloud types.
 - c. Factors causing cloud formations.
 - d. Relation to weather conditions.
 - e. Symbols for cloud types.
6. Fronts
 - a. Types of fronts.
 - b. Formation of fronts.
 - c. Weather related to fronts.
 - d. Symbols for fronts.

IV. Prepare a Table of Specifications

- A. The use of a table of specifications provides greater assurance that our test will measure a representative sample of the instructional objectives and the content included in the instruction. The instructional objectives are typically listed across the top of the table and the content areas are listed down the left side. Each objective and each area of content are then weighted in terms of their relative importance (e.g. amount of instructional time used), and numbers placed in the cells to indicate the number of test items to be allotted to each objective and each area of content.

A table of specifications for our unit on "weather maps" is presented in Table 1. Note that fourteen items are to be constructed for the first objective, KNOWS BASIC TERMS. Of these, two will be on "air pressure", two on "air temperature", two on "humidity and precipitation", two on "wind", three on "clouds", and three on "fronts". The remainder of the table is read in the same manner. Since many of the specific learning outcomes are measured by only two test items, our test interpretation will need to be confined to student performance on the general instructional objectives.

Only the general instructional objectives and the general areas of content were included in Table 1. A more detailed test plan can be obtained by including all specific learning outcomes and all subject-matter topics. This latter procedure is preferred for mastery tests, but it is difficult to illustrate here because of space limitations.

TABLE 1. Table of Specifications for a 60-Item Test on Weather Maps

Instructional Objectives	Knows Basic Terms	Knows Map Symbols	Knows Specific Facts	Interprets Weather Maps	Total Items
Content Areas					
A. Air Pressure	2	2	2	2	8
B. Air Temperature	2	2	2	2	8
C. Humidity and precipitation	2	2	3	3	10
D. Wind	2	3	3	4	12
E. Clouds	3	2	3	2	10
F. Fronts	3	3	3	3	12
TOTAL ITEMS	14	14	16	16	60

V. Set Standards of Performance

As noted in earlier chapters, setting standards of performance is easier for tests at the mastery level than at the developmental level. Where mastery is the goal, expected test performance can be described in terms on the percentage of test items must answer correctly to demonstrate mastery. The decision concerning what percentage-correct score properly indicates mastery, however, must be arbitrarily made. A standard of 80 to 85 percent correct provides a good starting point. This can be increased or decreased by taking into account the nature of the objectives, the types of test items used, and the level of mastery needed for future learning.

For our illustrative unit on "weather maps", levels of mastery might be set for each objective as follows:

<u>Objective</u>	<u>Levels of Mastery</u>
1. Knows basic terms	80%
2. Knows map symbols	100%
3. Knows specific facts	85%
4. Interprets weather maps	80%

In this illustration, knowledge of all map symbols was considered necessary, since the information is essential for map interpretation. The level of mastery for Interprets weather maps was set lower than that of the other objectives because the learning tasks are more difficult. Those levels of mastery for each objective may, of course, need to be revised somewhat in light of our experience

in teaching the unit. We shouldn't set performance standards in an arbitrary manner and then treat them as infallible.

VI. Select the Item Types to Use

A. SHORT-ANSWER ITEMS

Specific Learning Outcome: Writes a definition of each term.

Directions: Write a one sentence definition of each of the following terms.

1. Weather
2. Humidity
3. Occluded front

Specific Learning Outcome: Names the instrument used for measuring each weather element.

1. The instrument used to measure the amount of precipitation in a given locality is called a (an) _____.

Specific Learning Outcome: Lists the characteristics of a given weather phenomenon.

1. List three main characteristics of a hurricane.

B. MULTIPLE-CHOICE ITEMS

Specific Learning Outcome: Identifies the units of measurement used in reporting each weather element on a weather map.

1. United States weather maps indicate air pressure in
 - A. Inches
 - B. Feet
 - C. Pounds
 - D. Millibars

C. TRUE-FALSE ITEMS

Specific Learning Outcome: Distinguishes between correct and incorrect procedures for determining each weather element.

- T F 1. Dew point is determined by cooling a sample of air until it is free of moisture.

D. MATCHING ITEMS

Specific Learning Outcome: Matches each weather instrument to the weather element it measures.

Directions: On the line to the left of each weather element in Column A, write the letter of the weather instrument in Column B that is used for measuring it. Each instrument in Column B may be used once, more than once, or not at all.

Column A

- (b) air pressure
- (e) air temperature
- (c) humidity
- (a) wind velocity

Column B

- A anemometer
- B barometer
- C hygrometer
- D rain gauge
- E thermometer
- F wind vane

VII. Write the Test Items

VIII. Assemble the Items into a Test

When a sufficient number of test items have been written for a test, the items should be reviewed and arranged into the final test form. The following steps provide guidelines for this phase of test construction.

- A. Review the test items for relevance to the learning outcomes and for freedom from technical defects.
- B. Check the set of test items as a whole to be certain that they match the table of specifications.
- C. Group together all test items that measure the same instructional objective.
- D. Arrange the test items from easy to difficult within the entire test and within each section of the test (to the extent possible).
- E. Place the items on the page in such a way that they are easy to read and easy to score.
- F. Number the test items in consecutive order.
- G. Write clear directions for the test as a whole and for each separate item type.

It is especially important that items in a criterion-referenced test be arranged by instructional objective. This enables us to more easily score and interpret test performance in terms of each objective. Interpretation can be further facilitated by clearly labeling each section of the test. Thus, for our test on "weather maps", the first section would be entitled "Knowledge of Map Symbols", and would then be arranged in order of increasing difficulty, to the degree that such an arrangement is feasible.

As a minimum, the direction for the test should tell students how to record the answer and what to do about guessing. Since a correction for guessing

is seldom defensible with classroom tests, students are typically told to answer every item. A minimum set of directions for multiple-choice items might read as follows:

Read each item carefully and select the answer that best completes the statement or answers the question. Mark your choice by encircling the letter of the answer you select.

Try to answer every item. Your score will be the number of items answered correctly.

More elaborate directions would include a statement concerning the purpose of the test and the amount of time allowed for completing it. Most teachers give this information orally, however, so it need not be included in the written directions for the test.

IX. Provide for Test Interpretations

As noted earlier, student performance on a criterion-referenced mastery test is typically reported in terms of the percentage of items answered correctly for each objective. These "percentage correct" scores are then compared to the required level of mastery for each objective to determine which objectives have been satisfactorily mastered. This information can be presented to the student on a simple report form like that shown in Figure 1. This need not be a separate form, of course. The same information could be added to the test blank itself, for use by the student when the test results are reviewed.

A similar report form could be used for tests at the developmental level, but here we would want to also include the student's relative standing in class on each objective. That is, how his performance on each objective compared with that of other students who took the test. This might be in terms of his simple ranking in the group or his percentile rank (per cent of the students getting a lower score). An illustrative report form of this type is presented in Figure 2.

Including both the percentage of items answered correctly and the percentile rank for each objective, enhances our interpretation of test performance. Note in Figure 2, for example, that this student consistently answered more than fifty per cent of the items correctly, but that her relative standing was below average on the last three objectives. Thus both the referenced interpretation (percentage correct) and the norm-referenced interpretation (percentile rank) add unique and useful information to the description of test performance.

Test <u>Weather Maps</u>		Student <u>John Smith</u>	
Objective	Number Correct	Percentage Correct	Mastered (x)
1. Knows basic terms (14)*	12	86	x
2. Knows map symbols (14)	14	100	x
3. Knows specific facts (16)	12	75	
4. Interprets weather maps (15)	13	81	x

*Number of test items for each objective.

Figure 1. Report Form for Criterion-Referenced Mastery Test

Test: <u>Biology</u>		Student: <u>Mary Jones</u>	
Objective	Number Correct	Percentage Correct	Percentile Rank
Understands concepts (20)*	15	75	62
Understands principles (20)	16	80	74
Applies principles (20)	13	65	33
Applies methods (20)	12	60	27
Evaluates experiments (20)	11	55	20

*Number of test items for each objective.

Figure 2. Report Form for Test at the Developmental Level.

LEARNING OBJECTIVES FOR AN INSTRUCTOR TRAINING COURSE

The following list of objectives reflects the behaviors students should be able to demonstrate as a result of participation in the Instructor Training Course lectures and conduct of associated activities. They are listed by lesson and then according to the sequence they are presented within a given lesson.

<u>LESSON NUMBERS</u>	<u>OBJECTIVE NUMBER</u>	<u>OBJECTIVES</u>
1	I	Know the problems encountered when beginning instructor training. Students are required to give five minute impromptu presentations. A. List distracting hand gestures and other body movements. B. Identify nervousness and lack of preparation as problem sources.
2	I	Understand general problems encountered and characteristics manifested by beginning instructors which must be avoided or rectified if they are to become effective instructors. A. Point out the problems and characteristics when evaluating teaching-learning situations conducted by other people.
3	I	Articulate motivational factors that affect student learning.
	II	Apply concepts of needs and values to the development of 10, 20 and 40 minute lessons.
4	I	Discuss factors affecting students abilities to learn.
	II	Evaluate educational situations to determine the probability of learning gain to the criterion level.
5	I	Identify modes of sensory input.
	II	Identify ways in which people learn.
	III	Interrelate modes of sensory input, ways in which people learn and learning styles.
6	I	Identify and describe the methods of instruction presented in this lesson.

<u>LESSON NUMBERS</u>	<u>OBJECTIVE NUMBER</u>	<u>OBJECTIVES</u>
	II	Outline the procedures involved in using instructional methodologies used in this lesson.
	III	Use several methods of instruction in one lesson.
7	I	Know the differences between the 10, 20 and (2) 40 minute lessons they are to give later on in the course. A. Identify the differences between the four lessons. B. Choose topics suitable for the four presentations.
8	I	Describe the purpose of each section of a lesson plan.
9	I	Design student oriented behavioral objectives.
10	I	Develop a complete lesson plan.
11	I	Perform a complete task analysis for a specific task.
12	I	Draft a Demonstration-Performance lesson plan
13	I	Identify and describe at least three methods of evaluation.
	II	Identify attributes of instructor conduct which should be evaluated.
	III	Conduct a formal evaluation.
	IV	Conduct an administrator-instructor conference.
14	I	Know a variety of teaching aids. A. Outline the purposes of teaching aids. B. Define "Teaching Aids". C. Distinguish between different types of teaching aids.
15	I	Know methods and procedures involved in selecting films, slides and teaching aids suitable for specific lessons.
16	I	Know methods and procedures used in the development of teaching aids. A. Develops teaching aids. B. Describes methods and procedures used in teaching aid development.
17	I	Knows principles involved in writing an adequate lesson plan for a 10 minute presentation.

<u>LESSON NUMBERS</u>	<u>OBJECTIVE NUMBER</u>	<u>OBJECTIVES</u>
		A. Draft a 10 minute lesson plan.
18	I	Deliver a 10 minute presentation.
19	I	Understand principles involved in writing an adequate lesson plan for a 20 minute presentation.
		A. Draft a 20 minute lesson plan
20	I	Deliver a 20 minute presentation.
21	I	Demonstrate an understanding of factors affecting the study environment.
	II	Articulate the elements of effective studying.
	III	Identify test taking skills.
22	I	Apply factors related to learning retention to learn development.
	II	Describe the relationship between effective teaching, learning retention and the transfer of learning to new situations.
23	I	Understand principles involved in writing an adequate 40 minute knowledge oriented lesson plan.
		A. Draft a 40 minute knowledge lesson plan.
24	I	Deliver a 40 minute lesson at the knowledge of the cognitive domain.
25	I	Name and describe several types of tests.
	II	Name and describe several types of test items.
	III	Describe the steps through which one proceeds when developing a test.
26	I	Construct Criterion-Referenced test items.
27	I	Demonstrate an understanding of good counseling techniques.
28	I	Understand principles involved in writing an adequate 40 minute skill oriented lesson plan.
		A. Write a task analysis.

<u>LESSON NUMBERS</u>	<u>OBJECTIVE NUMBER</u>	<u>OBJECTIVES</u>
		B. Draft a 40 minute skill lesson plan.
29	I	Deliver a 40 minute presentation that involves teaching a specific skill.
30	I	Know the basic principles required for course evaluation. A. Assign a proper Lihert scale value (strongly agree-disagree) for each category of the course evaluation form. B. Make proper objective comments for each course evaluation form.

SAMPLE STUDENT PROBLEMS

- 1) Student continually misses class.
- 2) Student, although apparently bright, is doing poorly in class.
- 3) Student causes discipline problems in class.
- 4) Student, because of limited ability, is doing poorly in class.
- 5) Student never participates in class discussion and/or activities. Appears to be a "loner".
- 6) Student is uncooperative and unproductive in classroom situations.

DEPARTMENT OF TRANSPORTATION U. S. COAST GUARD CG-5027 (Rev. 1-78)		ACTIVE DUTY TRAINING EVALUATION FORM				
COURSE NO.	TITLE	DATE				
In order to provide our students with the best possible course and instruction we need your thorough attention to this form. BE CANDID and comment liberally Comments are a most valuable tool in the revision of courses.		(Place "X" where appropriate)				
INSTRUCTIONS For each of the following statements check the one block to the right which most closely describes your feelings regarding the statement. Comment liberally.		STRONGLY AGREE	AGREE	UNDECIDED	DISAGREE	STRONGLY DISAGREE
SECTION I - COURSE CONTENT						
1. The learning objectives (goals) for each class were made known to the students. COMMENTS:						
2. The classes met their learning objectives (goals). COMMENTS:						
3. The objectives (goals) will be useful to me in future job assignments. COMMENTS:						
4. All requirements were made clear by the instructors. COMMENTS:						
5. The assignments helped me meet the objectives (goals) for each class. COMMENTS:						
6. Students were made aware of any preparation needed for class. COMMENTS:						
7. Time spent in class was valuable and instructive. COMMENTS:						
8. Important concepts were clearly explained. COMMENTS:						
9. Each class within the course was necessary and could not have been excluded from the outline. COMMENTS:						

SECTION 3 - EVALUATION		(Place "y" where appropriate)				
		STRONGLY AGREE	AGREE	UNDECIDED	DISAGREE	STRONGLY DISAGREE
1. All requirements and assignments were relevant to the course. COMMENTS:						
2. All assignments were clearly worded. COMMENTS:						
3. Assignments were carefully and conscientiously marked and evaluated by the instructors. COMMENTS:						
4. Assignments and tests were returned within a reasonable length of time. COMMENTS:						
SECTION 4 - GENERAL						
1. I have benefited from this course. COMMENTS:						
2. I feel that I will be able to use the material covered in this course in my current assignments. COMMENTS:						